

# **Disarmament and Security Centre**

## **Tertiary Education Scoping Project**

### **Report: The State of Tertiary Non-proliferation and Disarmament Education in New Zealand**

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Lucy Stewart, DSC Coordinator, speaks to students at the University of Auckland, August 2018.

## **1. EXECUTIVE SUMMARY**

The Disarmament and Security Centre has worked in the disarmament field for four decades and has observed many changes in disarmament education in New Zealand over that time. We have seen lecturers who focus on disarmament material come and go, courses change their focus and structure to include some disarmament elements or remove them, and we have been invited to deliver guest lectures at almost all Universities across New Zealand, at some time. Prior to undertaking this research, our understanding was that there was very little regular disarmament education being taught at the tertiary level in New Zealand.

Over 2019 and 2020 the DSC team began formally researching the state of disarmament - and more broadly, non-proliferation - education tertiary teaching at New Zealand universities. We looked into which academics are researching and teaching on disarmament (and related) issues, carried out interviews where possible with these academics, and followed up with research on courses offered on university websites.

Our research indicates that disarmament- or non-proliferation-related material is not being taught comprehensively or systematically across disciplines, across New Zealand universities. Significantly, there are fewer courses teaching disarmament today than in earlier years, when regular courses were taught at the University of Canterbury.

A key exception to this is the University of Auckland, where Associate Professor Treasa Dunworth and Dr Anna Hood in the Law Faculty are very active in disarmament research and teaching and encourage their students to carry out research on disarmament-related topics. Associate Professor Dunworth has twice offered a summer school paper (LAW 466 Contemporary Issues in Disarmament Law), which is the only New Zealand tertiary level course that solely focuses on disarmament. It has attracted a large number of students both times it was offered and is being offered again in the summer school semester 2021 (Jan / Feb).

All eight universities offer courses on broader conflict issues (such as defence and security studies, conflict resolution, peace education, peace building, ethics of war, terrorism, law of armed conflict etc.) however within these courses, disarmament as a concept (and disarmament-

related material) is touched on only briefly and sporadically. This is an obvious gap in course curricula, as well as a teaching opportunity, as a disarmament module would fit easily and appropriately into these highly subscribed courses.

Our view is that (aside from the course offered at the University of Auckland) this is a significant gap in tertiary education offered in New Zealand, especially considering our national history in the area and the disarmament work that New Zealand carries out internationally.

All of the academic staff we spoke with agreed that the lack of disarmament and non-proliferation teaching at the tertiary level in New Zealand was significant, and several appeared interested in incorporating some material into their courses. Our staff were invited for two guest lectures as a result of these conversations – a postgraduate Conflict and Terrorism Studies course at the University of Auckland<sup>3</sup> and an undergraduate Political Science course at the University of Canterbury.<sup>4</sup>

Tertiary teaching in non-proliferation and disarmament occurs primarily in the social sciences and law disciplines, with the most comprehensive courses taught by academics with a primary and sustained research interest in NPD theory and practice, and a public profile in NPD policy analysis. Other courses that include minor NPD teaching elements are taught by academics with a wider research profile within the discipline, of which NPD is only a minor part, or by guest lecturers, who are usually unpaid for this teaching work. There is a worryingly small number of academics with the expertise and capacity to teach comprehensive NPD courses at stage 2 and stage 3 undergraduate level and, in particular, postgraduate courses at Honours and (taught) Masters level, or to supervise Masters and PhD research in NPD topics. The absence of dedicated undergraduate courses, or significant NPD components in senior undergraduate courses, has stymied the flow of students taking up NPD research at postgraduate level and the number of New Zealand PhD graduates with capability to lead NPD research and teaching at

<sup>3</sup> Politics 773 From Dresden to Drones: The Ethics of War, Master of Conflict and Terrorism Studies, University of Auckland, Coordinator: Dr Thomas Gregory, Politics and International Relations Department.

<sup>4</sup> POLS 202 International Relations and Humanitarian Ideals, University of Canterbury, Coordinator: Dr Jeremy Moses, Political Science and International Relations Department.



New Zealand universities. The lack of a coordinated academic NPD collegial research community in New Zealand, to nurture new academics, and to encourage and supervise their development, including through publishing academic papers and presenting conference papers, also hampers their candidacy for appointment to academic appointments in New Zealand. Universities may overlook recent New Zealand PhD graduates with NPD specialisation for vacancies, in favour of foreign candidates with other specialisation and publishing and employment records that may be considered more prestigious. This may push New Zealand graduates offshore or into other occupations, and constrain their ability to contribute to and help to grow the New Zealand NPD academic sector.

There are also significant gaps in NPD tertiary teaching across New Zealand, in terms of the spread of comprehensive teaching across the eight universities, the number and type of relevant disciplines that teach pertinent aspects of NPD, and the paucity of academics with the expertise and capacity to teach NPD. Interviews conducted for this study confirm that there is a lack of time in busy courses to teach NPD issues, and a lack of expertise, interest or awareness of NPD theory and case studies pertinent to each discipline, or of the value of perpetuating New Zealand's disarmament culture in successive generations. Also, the preliminary findings of this initial study indicate that there is a distinct lack of non-proliferation teaching in STEM subjects that involve dual-use science and technology that are capable of being misused for hostile purposes, or to cause harm inadvertently or negligently.

There is a real urgency to increasing NPD education, as the expertise in this field is ageing and if we don't educate the next generation on disarmament issues soon, we risk not being able to fill key policy and other professional positions in the field. Sarah Bidgood has researched this issue in the USA and her papers has formed some of the research questions for this Tertiary Scoping Paper. While obviously the situation in the US, and the jobs needed there, are different

<sup>5</sup> Sarah Bidgood (2019): Undergraduate disarmament and nonproliferation education: gaps, opportunities, and new approaches, *The Nonproliferation Review*, Vol. 26, Issue 3-4, pp. 329-340.

to New Zealand, our countries share the problems of having disarmament expertise held mostly by senior colleagues and only a rare few younger people maintaining a sustained interest in the field - or indeed, even being exposed to it, let alone finding employment in the field. Bidgood also notes that there is a need to increase diversity within the disarmament field and ensure that women and people of colour are exposed to the subject and given opportunities to engage, as typically the field has been dominated by males of Western origin, which has limited the range of discourse. These findings are also valid in New Zealand.

On the basis that NPD tertiary education should raise awareness of NPD issues to tertiary students and equip them to analyse and debate them, and train the next generation of academics, policymakers, regulators, politicians and researchers in NPD issues, this study proposes the following recommendations to strengthen the provision of NPD tertiary teaching at New Zealand universities.

1. Develop a network of academic champions (as identified in this report) that can: share curricula, teaching materials and discuss NPD pedagogy; champion the inclusion of NPD in courses across the university, including at senior management levels; foster an NPD academic community across New Zealand universities; and support academic publishing and conference opportunities for postgraduate students, and the employability of NPD graduates in the field.
2. Collate relevant course materials that are already available across a range of disciplines (social science, law, humanities and, where available, STEM disciplines) for use in current and any new courses, and promote these widely across New Zealand universities.
3. Develop relevant course materials that can be used to insert an NPD component in pertinent disciplines, that are capable of being taught by non-NPD specialist academics, or guest lecturers.

4. Engage with university departments to secure their support for the inclusion of NPD elements in relevant courses, including by guest lecturers, and especially in departments where such teaching is currently minimal or non-existent (including STEM disciplines).
  - a. Encourage the inclusion of an NPD component in core/stage 1 courses in relevant disciplines (small section).
  - b. Encourage the teaching of dedicated NPD-related stage 2/3 courses, to deepen the breadth of NPD teaching, and increase the stream of students heading for postgraduate NPD study.
5. Use the latent expertise and capacity in New Zealand (by experts who aren't employed by universities) to teach NPD courses and supervise postgraduate students in NPD research papers (at Honours, Masters and PhD levels). This would need to be paid, such as by PADET grants, or through an appropriately-funded DEUNIF allocation.
6. Fund the development of a full NPD tertiary course to teach in a social sciences discipline, such as Political Science/International Relations, to include course curricula, resources list, lecture outlines and PowerPoints, essay and exam questions. Ideally, it should be developed in coordination with the network of NPD academic champions and with the support of a 'home' university department that is willing to provide guidance on the format and requirements of new course applications considered for inclusion in the university calendar. This course could then be taught in a pilot trial, either by experts not currently employed by a university (around \$20,000 p.a.) or by an academic currently employed at a university. The course could then be developed further on the basis of this trial. Ideally, this course would continue to be taught annually. Course materials would be shared among the champions network, so that elements could also be included in existing courses.



7. Fund regular guest lectures, utilising the excellent latent capacity of NPD expertise based outside universities, to improve the provision of NPD teaching in currently taught courses. These are often currently provided for free.
8. Regularise and widely promote the provision of PADET Masters scholarship funds for students taking a Masters thesis, or a taught Masters course that includes a research paper on an NPD topic. The taught Masters research paper scholarship might be offered at a reduced amount to the current Masters scholarship to reflect that this research is approximately one quarter of a Masters thesis output, and in order to make more scholarships available and thereby incentivise more students to undertake such research.
9. Carry out a follow-on research project to assess how amenable STEM disciplines are to including pertinent non-proliferation teaching in existing or new courses. A pilot project could usefully focus on liaising with one department at one university, with a view to developing relevant course materials for inclusion in an existing course (such as on dual-use scientific ethics). For example, with the Biology Department at the University of Canterbury, due to the DSC's base in Christchurch.



Kate Dewes gives a lecture to University of Canterbury Sociology students, July 2020.

## 2. INTRODUCTION

*There has never been a greater need for education in the areas of disarmament and non-proliferation, especially with regard to weapons of mass destruction, but also in the field of small arms and international terrorism. Since the end of the cold war, changing concepts of security and threat have demanded new thinking. Such new thinking will arise from those who are educated and trained today.*

*The overall objective of disarmament and non-proliferation education and training is to impart knowledge and skills to individuals to empower them to make their contribution, as national and world citizens, to the achievement of concrete disarmament and non-proliferation measures and the ultimate goal of general and complete disarmament*

*under effective international control." (2002 United Nations Study on Disarmament and Nonproliferation Education.)<sup>6</sup>*

There are two inter-related existential threats to humanity: the climate crisis and nuclear weapons. While climate change is a well-known phenomenon, the risks posed by nuclear weapons (and other weapons of mass destruction (WMD)) are much less known, especially among young people. As the United Nations study highlights, we need an informed populace in order to achieve positive non-proliferation and disarmament outcomes. This requires non-proliferation and disarmament (NPD) education that reaches a significant number of people, from across society.

New Zealand has a long and proud history in the field of disarmament. However, our experience is that young New Zealanders are largely unaware of this heritage and are not acquainted with NPD challenges, including the impact of the worsening international political environment on NPD frameworks and norms, the significant risks posed by dual-use scientific and technological developments for the proliferation of WMD and the potential for the hostile application of emerging technologies. We consider that this is due, at least in part, to the paucity of NPD teaching at tertiary institutions in New Zealand, at least in a regular, formalised way. In order to test this hypothesis, we initiated a project to scope the state of NPD tertiary teaching in New Zealand.

This report presents our initial findings under this project. It provides an overview of the breadth and depth of NPD-related tertiary teaching at New Zealand universities, and identifies disciplines and specific courses in which aspects of NPD teaching are currently being taught, and some reasons why it is not being taught. It also highlights certain other disciplines and courses in which NPD may, could (or arguably, should) be taught, in particular to achieve the “non-proliferation” objective of preventing New Zealand science and technology being misused

<sup>6</sup> United Nations General Assembly (UNGA), “United Nations Study on Disarmament and Nonproliferation Education: Report of the Secretary-General”, A/57/124, 30 August 2002.

for proliferative or other hostile purposes, but also to encourage New Zealand experts to develop and apply technological innovation to disarmament initiatives.

Following this analysis of the current state of tertiary NPD education, the report offers recommendations to improve the provision of such teaching, while acknowledging potential constraints to achieving this in practice. The DSC intends to implement appropriate recommendations – in coordination with partners - in a follow-on phase of this project, subject to funding.

### **3. RESEARCH METHODS**

The project researchers obtained information on NPD-related tertiary teaching from all eight New Zealand universities by: searching their websites; contacting academics who research in NPD issues, and/or who teach in relevant faculties, or who coordinate relevant courses; and liaising with our own contacts in the sector. We sought to interview those academics teaching courses most traditionally associated with NPD teaching, and to survey academics in a wider range of pertinent disciplines by email. As a small not-for-profit organisation with limited time available for this research, we have not been able to secure interviews or follow-up our survey requests with everyone we had hoped to, and a number of subjects were not available (they were on leave, or not answering emails etc.). However, we have done our best to canvas a range of voices from across New Zealand, and to extensively analyse course information on university websites, particularly for disciplines which have traditionally taught aspects of NPD. Also, as New Zealand is a relatively small country with a close-knit tertiary sector, we believe that the interviews we have been able to carry out have provided a reasonably accurate portrait of the state of NPD education in the traditional disciplines (in social science, law and humanities) in New Zealand at present.

Due to resource constraints, it wasn't possible to carry out a detailed assessment of the state of non-proliferation-related teaching in the much larger natural and physical sciences, mathematics, engineering and technology faculties, (such as on ethics and codes of conduct in dual-use research) and this could usefully be carried out in a follow-on phase.

### **How we gathered our material**

We carried out empirical research by surveying course information on the websites of the eight New Zealand universities to identify relevant faculty staff and courses: University of Auckland, Auckland University of Technology, University of Waikato, Massey University, Victoria University of Wellington, University of Canterbury, Lincoln University and University of Otago. We then interviewed and surveyed academics at each of these universities, primarily in the faculties that we know have taught aspects of NPD or which could integrate such material into existing course curricula relatively easily (social sciences, political sciences, law, and humanities) to deepen our understanding of their university's offerings. We then sought to broaden our research into the fields of science, mathematics and engineering, to determine if there are courses in these disciplines that may cover material that is relevant to NPD, particularly concerning emerging technologies. While we have not completed that research yet, we have made some tentative conclusions based on our initial findings.

We conducted most interviews by telephone, with some carried out in person. When we were not able to connect with academics that we contacted, we relied on material on the respective university website and anecdotal information from their colleagues.

We asked our academic contacts:

- Do you teach any disarmament-related material?
- If so, what is the key focus, how much time is spent on the topic, how regularly is the course held?
- What has been taught in the past by previous lecturers at your university?



- Are you aware of other academics teaching disarmament-related material?
- Do you have any Masters / PhD students that are working on disarmament-related research? Have you had any in the past? Or do you know of any at your university?
- Are you, and your students, aware of PADET funding for Masters and PhD research on disarmament topics?

We also reviewed the 2002 *United Nations Study on Disarmament and Nonproliferation Education*, which can be found [online here](#). This report, which highlights the importance of NPD education that attracts a diverse and inclusive audience, informed our analysis and our recommendations in this report.<sup>7</sup>

In addition, we studied Sarah Bidgood's 2019 [paper](#) on the state of NPD tertiary education in the United States<sup>8</sup> to help inform our research and highlight areas for improvement and opportunity in New Zealand. While Bidgood's paper is specific to the situation in the US, it is interesting to note that a lack of tertiary NPD education is not unique to New Zealand, but is also widespread in a country with a large NPD policy community. Bidgood's paper includes constructive recommendations that she would like to see implemented in the USA, some of which are highly relevant for the New Zealand context, these helped to inform some our recommendations for improving NPD tertiary education in New Zealand.

<sup>7</sup> Dr Kate Dewes, DSC Director, was part of the UN Study on Disarmament and Non-Proliferation Education from 2000-2002 and played a central role in drafting this paper. Therefore, this study continues to form the foundation of the DSC's work today.

<sup>8</sup> Sarah Bidgood (2019): Undergraduate disarmament and nonproliferation education: gaps, opportunities, and new approaches, *The Nonproliferation Review*, Vol. 26, Issue 3-4, pp. 329-340.



Kate Dewes presents to Villa Maria students at their annual Mercy Breakfast. August 2020.

#### 4. NON-PROLIFERATION AND DISARMAMENT TEACHING

This section provides a summary of the project’s research findings on NPD teaching, which are detailed in Tables 1<sup>9</sup> and 2<sup>10</sup>. It discusses NPD teaching at each university by discipline, and identifies courses which are known to teach aspects of NPD, and courses which may currently teach aspects of NPD (which we haven’t been able to confirm yet) or which could add NPD components within the scope of their curricula. It specifies certain reasons why NPD is, and is not, being taught at these universities, and identifies possible NPD-teaching ‘champions’ at each university who could be harnessed to help enhance NPD tertiary teaching nationwide.

<sup>9</sup> Table 1: Summary of taught courses that include a NPD component (current and former courses).

<sup>10</sup> Table 2: Taught courses that include a NPD component (current and former courses) or which could introduce a NPD component within their current curricula.

## **A. University of Auckland**

- a. Disciplines and courses currently teaching courses with an NPD component: ***Law;***  
***Politics and International Relations.***

**Law:** Associate Professor Treasa Dunworth teaches LAWPUBL466 Contemporary Issues of Disarmament Law, a post-graduate summer school course focussing exclusively on disarmament (the only such course in New Zealand). It will be held for the third time in summer 2021. The paper is routinely highly-subscribed, attracting around 100 students (in 2019). Associate Professor Dunworth is highly active in disarmament law research and encourages students to carry out research in disarmament-related material at various levels of study through dissertations and Masters theses. As a PACDAC member, she is very familiar with PADET funding and actively promotes the availability of PADET scholarship and project funding to her students.

**Law:** Dr Anna Hood doesn't currently teach disarmament law, although it is her key research focus. She currently teaches Public International Law (and does touch on some disarmament issues in here) and encourages students to carry out research in disarmament-related material at various levels of study through dissertations and Masters/PhD theses, for which she offers research supervision. She has research projects which are funding research assistants to work on disarmament-related topics and she highlights disarmament career pathways for students.

**Politics and International Relations:** Dr Thomas Gregory coordinates the Master in Conflict and Terrorism Studies, which currently has 30-40 students, and teaches Politics 773 From Dresden to Drones: The Ethics of War course, which includes a minor component on methods of warfare (international humanitarian law, drones, emerging technology, lethal autonomous weapon systems). He is interested in incorporating more disarmament-related material in his courses and invited DSC staff to give a guest lecture. He is also carrying out a research project with colleagues in Engineering "on the relationship between conflict, water and security and a Virtual Reality project with colleagues in Computer Sciences on the ethics of war. Both are interested in exploring opportunities to use new technologies to explore debates in international

politics.” This presents an opportunity to engage Engineering and Computer Science academics to research and teaching on non-proliferation.

**Politics and International Relations:** Associate Professor Steven Hoadley teaches Politics 750 International Relations and Human Rights which, according to its course outline, includes a minor component on arms control.

- b. Disciplines and courses which may currently teach aspects of NPD (which we haven’t been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a ‘disarmament champion’: *History; Physics; Engineering (General Education).*

**History:** Associate Professor Maartje Abbenhuis researches and lectures on neutrality and internationalisms (i.e peace activism and disarmament) 1815 - 1918. She recently completed books on the Hague Peace Conferences and on how disarmament became a hot topic. She formerly taught on ‘War, peace and society’, and ‘International history of Europe in the 1900s’, an Honours level paper in the history of war and peace (i.e. Hague Peace Conferences, WW1, origins of arms races). She is very interested in disarmament issues, although currently does not teach disarmament-specific material in her courses.

**Physics:** Associate Professor Peter Wills researches scientific topics which are highly relevant to teaching non-proliferation in STEM disciplines (especially biology, biochemistry, genetic engineering) and has long-held associations with science and peace groups that engage in and support NPD education (e.g. Scientists for Global Responsibility, Disarmament and Security Centre). Professor Wills and Dr Robert White founded the Centre for Peace Studies at Auckland University which operated from 1988 - 2008.<sup>11</sup>

**Engineering (General Education):** Engineering students must take two optional courses in ‘general education’ from an approved list, which includes ENGGEN100G Technological

<sup>11</sup> See DSC legacy website for papers published by this Centre:  
[http://legacy.disarmsecure.org/publications/papers/papers\\_by\\_author.php#Papers\\_CPS](http://legacy.disarmsecure.org/publications/papers/papers_by_author.php#Papers_CPS)

Choices for the Future, which could usefully introduce a component on science and technology ethics for non-proliferation.

**Summary:** Our research indicates that NPD is currently only taught in law (undergraduate) and the social sciences (postgraduate); there is interest in introducing it in a history course. All such teaching is in optional courses, led by academics with a core disarmament- or weapons-related research focus and who appear to have developed NPD-related courses, or introduced NPD material into a wider course, based on their personal research interest. We were not able to identify specific NPD-related teaching in the natural and physical sciences, mathematics, engineering or technology disciplines (although Associate Professor Peter Wills, Physics, has specialist research expertise). This may be due to the ethics focus on human and animal participants in experimentation, rather than on the potential for hostile applications of dual-use science; further research is required. We consider potential NPD teaching champions at this university to be Associate Professor Treasa Dunworth, Dr Anna Hood, Dr Thomas Gregory and Associate Professor Peter Wills.

## **B. Auckland University of Technology**

### **a. Disciplines and courses currently teaching courses with an NPD component:**

#### **Journalism and Communication Studies (Pacific Media Centre).**

**Journalism and Communication Studies (Pacific Media Centre): Dr Heather Devere (University of Otago)** offered a course on New Zealand Peace History, which included a component on nuclear-free New Zealand, in a 2019 summer school but it was cancelled due to low enrolment numbers. We're not aware of this course being offered elsewhere.

We do not know of any other current courses on NPD-related material.

### **b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their**



curricula, or which are taught by a 'disarmament champion': **Journalism and Communication Studies (Pacific Media Centre), Conflict Resolution.**

**Journalism and Communication Studies (Pacific Media Centre): Professor David Robie** researches peace journalism, South Pacific politics and has published a book on the Rainbow Warrior, but we could not identify any courses that currently include NPD material.

**Conflict Resolution: Dr Jane Verbitsky** researches international relations and regional studies, which could introduce NPD-related material, but we could not identify any courses that currently include NPD material.

**Summary:** Our research indicates that NPD is not currently being taught at this university, although there may be capacity for it to be taught in journalism or communication studies. We were not able to identify specific NPD-related teaching in the School of Engineering, Computer and Mathematical Sciences, or School of Science; further research is required. We consider potential NPD teaching champions at this university to be Professor David Robie and Dr Jane Verbitsky (Associate Professor Heather Devere is a Research Associate, and is based at the University of Otago).

### **C. Waikato University**

- a. Disciplines and courses currently teaching courses with an NPD component:

#### **International Relations and Security Studies.**

**International Relations and Security Studies: Dr Mark Rolls** teaches IRSST206 International Relations: The Security Agenda, a 200 level core paper of the IRSST minor, which includes a component on nuclear weapons, and IRSST315 International Politics of Asia, a 300 level optional paper, which includes study of North Korea (and its nuclear weapons). **Dr Reuben Steff** teaches IRSST103 Introduction to International Relations, a 100 level foundation paper in the International Relations discipline, which includes a component on nuclear

proliferation, and IRSST506 International Relations and Global Security, a post-graduate paper at Certificate, Diploma and Masters level, which includes a component on nuclear proliferation and deterrence. Dr Steff studied his PhD on nuclear deterrence under Professor Robert Patman (Politics, University of Otago) and formerly worked at the Ministry of Foreign Affairs and Trade (including the International Security and Disarmament Division, and Strategic Policy Division) before taking up his appointment at this university.

- b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion': **Law.**

**Law: Professor Alexander Gillespie** researches international law and the laws of war, and teaches LAWS476 Laws of Armed Conflict and International Humanitarian Law, which would a component on methods of warfare. We requested an interview with Professor Gillespie, but have not been able to arrange this yet.

**Summary:** Our research indicates that NPD is currently only taught in international relations and security studies (undergraduate and postgraduate), where it is addressed as a minor component in four courses, including one foundation paper and one post-graduate paper. These courses are led by academics with a keen security studies research focus, and/or specific post-graduate study (PhD) in non-proliferation followed by a diplomacy/policy career that included disarmament issues, and who appear to have introduced NPD material into a wider course, based on their personal research interest. In addition, we believe that methods of warfare is taught in an optional undergraduate paper in law. We were not able to identify specific NPD-related teaching in the Division of Health, Engineering, Computing and Science. We consider potential NPD teaching champions at this university to be Dr Mark Rolls, Dr Reuben Steff and Professor Alexander Gillespie.

#### **D. Massey University**

- a. Disciplines and courses currently teaching courses with an NPD component: **none.**
- b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion': **Politics, Defence and Security Studies.**

**Politics:** Associate Professor **Beth Greener** (Manawatu campus) researches international security and international relations and teaches 200.261 World Politics and 200.761 International Relations Theory and Practice. **Dr Damian Rogers** (Albany campus) researches international arms control and disarmament, international armed conflict and civil war, and United Nations sanctions regimes and arms embargoes, and teaches 200.261 World Politics, although the online course information does not indicate any NPD-related component in this course.

**Defence and Security Studies:** We interviewed **Dr Germana Nicklin** (Wellington campus) about NPD teaching at the centre. She noted that **The Centre for Defence Studies** offers papers at undergraduate and postgraduate level in two strands: defence, and security studies. Defence studies focus on military, warfare, cyber warfare, peacekeeping, and the intersection of society and warfare. Security studies focus on border security, intelligence and police, information and cyber security, food security, environmental and economic security, and human security. Research areas in the centre include defence, terrorism, border and bio-security, intelligence, NZ national security theory and defence security, Asia / Pacific security, and security concepts and structures. She noted that the Centre has strong relationships with security-related agencies and the Government sector, which Advisory Board members from the Ministry of Foreign Affairs and Trade, and Ministry of Defence. We indicated that there is no focus on disarmament, although once we raised it, she noted that some core BA papers included study of nuclear-free New Zealand, but acknowledged the wider NPD teaching gap and was quite sympathetic to its inclusion. We consider that there is scope for positive cooperation with the

centre to include NPD teaching in its courses in the future. Dr Nicklin's own research interest is in border security and there is some scope to include a minor non-proliferation component in such a course, for example.

**Defence and Security Studies:** **Dr Rhys Ball** (Albany campus) teaches in intelligence and international security. **Terry Johanson** (Manawatu campus) researches military operations, irregular warfare and national security. **Dr Negar Partow** (Wellington campus) researches human security and border security. **Dr Anna Powles** (Wellington campus) researches women, peace and security; New Zealand defence and foreign policy; peacekeeping; and regional security issues and teaches in New Zealand national security.

**Adjunct Lecturer, Thomas Nash** (Wellington based). Thomas has significant career experience in humanitarian disarmament and campaigning, and research in NPD concerning landmines, cluster munitions, explosive weapons, unexploded ordnance in populated areas, nuclear weapons, and new weapons technologies. In our interview with him, Thomas noted that he didn't currently teach any disarmament-related material at Massey and as far as he was aware, no disarmament material was taught.

**Summary:** Our research indicates that there is no focussed NPD teaching at this university, although there is suitable expertise to do so and highly appropriate courses for such material to be taught. We were not able to identify specific NPD-related teaching in the sciences, although further research is required. Massey University is a special character university, with a focus on defence and security studies, and the sciences. Particular aspects of NPD teaching are highly relevant for each discipline (such as New Zealand's foreign and defence policy concerning weapons, and preventing the hostile application of dual-use science and technology, respectively). The lack of specific NPD teaching at this university, if this is a valid assumption to make across the university from our research to date, is highly regrettable, and we welcome Dr Germana Nicklin's positive consideration of this issue in our discussion with her. We

consider potential NPD teaching champions at this university to be Associate Professor Beth Greener, Dr Damian Rogers, Dr Anna Powles, Dr Germana Nicklin and Thomas Nash.

## **E. Victoria University of Wellington**

### **a. Disciplines and courses currently teaching courses with an NPD component:**

#### **International Relations, Strategic Studies, Law.**

**International Relations:** We interviewed **Associate Professor David Capie**, Director of the Centre for Strategic Studies and Associate Professor in International Relations about his research in conflict and security studies, and New Zealand's international relations. He teaches INTP371 Human Security, an optional 300 level paper, which includes a component on landmines, cluster munitions, small arms and international humanitarian disarmament, although this was last offered in 2017 and he noted it has not been confirmed when it will be taught again. He also teaches STRA538 Strategic Asia, an optional paper on the taught Masters in Strategic Studies, which includes a component on the politics of nuclear weapons, among other papers that touch on conflict and disarmament issues; none have a disarmament-specific focus. David noted that a new lecturer who joined the department in 2019 may choose to teach INTP371, although the course content may change according to her research preferences (Dr Julija Sardelic has research interests in citizenship, migration and minority rights). He noted that other international relations courses do not address disarmament and he wasn't aware of other lecturers teaching disarmament-related material at this university. David couldn't recall many (if any) students doing disarmament-related dissertations, Masters or PhD study recently. He noted that many students take Masters by taught papers, rather than a dissertation, these days and that these students have not chosen disarmament topics for their research papers. He has a lot of material on the landmines campaign and would be very interested for a student to use them. He said students (and faculty) were not so aware of the PADET scholarships and



these were not widely promoted, although he thought they would likely be on scholarships office online database. He agreed that there was a gap in disarmament being taught nationwide and said that at this point Victoria University was not filling that gap.

**Strategic Studies:** other academics in the Politics and International Relations programme and who are affiliated with the Centre for Strategic Studies conduct research and teach on aspects of NPD. **Professor Robert Ayson** teaches on INTP113 Introduction to International Relations, a foundation undergraduate paper, which includes a small component on arms control. **Dr Cathy Downes** teaches STR536 Special Topic: The Future of War, an optional paper on the taught Masters in Strategic Studies, which includes study of weaponization of space, and technology in future warfare, and INTP250 Cyber Power in International Relations, an optional 200 level undergraduate paper, which addresses cyber arms racing and arms control, and cyber war and deterrence. **Dr Malcolm McKinnon**, Adjunct Research Fellow, coordinates INTP212 Special Topic: Power, Influence and International Security, which includes some study of disarmament.

**Law:** We interviewed **Professor Alberto Costi** who researches public international law, and especially the law of armed conflict. He teaches LAWS445/545 Special Topic: International Law in the Asia-Pacific Region, an optional paper for advanced undergraduate law students and Masters students, which includes some study on disarmament. He said that he teaches very little disarmament-related material despite his interest in the topic. He expressed interest in including more disarmament-related material, although this was dependent on the interest of students and the availability of guest lecturers. His seminar courses run on alternate years and have around 40-45 students. His LAWS 397 Use of Force course has two lectures with some reference to disarmament, including the ICJ Advisory Opinion,<sup>12</sup> while his LAWS340 International Law paper, which is the foundation paper in international law, doesn't have time to cover disarmament issues (these are usually taught in specialist advanced international law courses at

<sup>12</sup> International Court of Justice, Legality of the Threat or Use of Nuclear Weapons [1996] ICJ 2

most universities). In terms of the Masters and PhD students he supervises, there is very little disarmament-related research being done. One student recently wrote a dissertation on Lethal Autonomous Weapons and another wrote an essay on the ICJ Advisory Opinion. He said many students are from abroad and don't seem to have an interest in disarmament. He wasn't aware of PADET funding for Masters and PhD students and said he didn't think his students were aware of this funding source; he is interested to know more about it.

- b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion':

**International Relations:** We contacted **Dr Van Jackson** for an interview, but have not heard back from him yet. He researches Asian studies, strategic studies, foreign policy, international relations, deterrence, and technology and international security; is an expert on North Korea; and has an extensive background in policy analysis in US think tanks and government service. He teaches INTP115 Introduction to Security Studies and INTP245 Foreign Policy Analysis, which could include aspects of NPD within their course remit.

**Adjunct faculty:** **Dr Rod Alley**, Senior Fellow at the Centre for Strategic Studies, formerly Associate Professor in Political Science and International Relations has an extensive research record in arms control and disarmament. **Dr Malcolm McKinnon**, Adjunct Research Fellow, Political Science and International Relations, coordinates INTP212 Special Topic: Power, Influence and International Security, which includes a component on disarmament. **Dr Maria Pozza**, Director/Lawyer at Gravity Lawyers, wrote her PhD on arms control and space law and has held PADET project grants. She held an Adjunct Lecturer position in 2017 teaching INTP201 Special Topic: Cyber Security and International Relations, which has not been held since.

**Summary:** Our research indicates that NPD is currently taught in international relations, strategic studies and law (undergraduate and postgraduate) but only as a minor component; a course with more systematic NPD teaching has been suspended and will not be taught with a

different focus under a different staff member. All such teaching is in optional courses, led by academics with some focus on disarmament- or weapons-related research (from a security studies perspective), who have introduced NPD material into a wider course, based on their personal research interest. There is recognition of the value of NPD teaching, but acknowledgement that lack of student interest (perhaps due to a lack of awareness of the issues), a lack of teaching capacity and available course time makes introducing NPD material challenging. We were not able to identify specific NPD-related teaching in the natural and physical sciences, mathematics, engineering or technology disciplines; further research is required. We consider potential NPD teaching champions at this university to be Associate Professor David Capie and Professor Alberto Costi. This university could usefully draw on available NPD teaching expertise among adjunct faculty and the wider Wellington-based policy and government community to enhance its NPD teaching option, especially as a component of existing courses.

## **F. University of Canterbury**

- a. Disciplines and courses currently teaching courses with an NPD component: **Political Science and International Relations.**

**Political Science and International Relations:** We interviewed **Dr Jeremy Moses** who researches international relations and, under a new three-year Marsden award, lethal autonomous weapons, and currently teaches POS202 International Relations and Humanitarian Ideals, which includes some study of disarmament and guest lectures by the DSC (two years in a row). He noted there are not many students researching NPD-related topics at the Masters and PhD level (apart from Marcus Coll and Olivia Shimasaki, who are connected with the DSC) and that there is little awareness of PADET scholarships and project grants. In particular, he noted

that the department has only taught NPD sporadically since Dr Ogilvie-White left the university in 2012.

**Dr Tanya Ogilvie-White**, formerly Senior Lecturer in International Relations during 2003-2012, has research expertise in nuclear weapons proliferation; nuclear arms control, non-proliferation and disarmament initiatives; multilateral security cooperation; and Track II diplomacy; as well as policy experience in think tanks in the UK and US (and now, Australia). She created a course on Nonproliferation that was cross-coded for Politics and Diplomacy (Honours) majors, and the Master of International Law and Politics (ILAP) programme, which she taught from 2003-2009 (and was taught by Angela Woodward during 2009-2011 while Dr Ogilvie-White was on extended sabbatical). She supervised at least three Masters students in disarmament topics, with one going on to complete a PhD. Two of the Masters students are working on non-proliferation issues at the Ministry for Business, Innovation and Employment, and the PhD graduate is currently a Research Fellow on nuclear policy issues at Kings College London. Dr Ogilvie-White and Angela Woodward worked together at the Programme for Promoting Nuclear Nonproliferation (PPNN) at the Mountbatten Centre for International Studies, Department of Politics, University of Southampton during 1998-1999, while Dr Ogilvie-White was completing her PhD. When Dr Ogilvie-White resigned from the university in 2012, her Nonproliferation course went into hibernation.

**Dr Kate Dewes** (Adjunct Senior Fellow, History) and **Angela Woodward** (Acting Executive Director, Programme Director, VERTIC) co-taught POLS317 International Politics: Peace and Conflict Studies during 2016, which focussed exclusively on arms control, non-proliferation, disarmament and New Zealand peace studies, following a lecturer resignation. This course has not been offered with this teaching focus since then. Dr Kate Dewes previously lectured on peace and disarmament in the interdisciplinary INCO courses at the university, for over 20 years from 1987 onwards with Prof Kevin Clements and other lecturers from a range of departments. At its peak these courses attracted over 120 Stage 1; 54 Stage II and 24 Stage III students but these courses were vulnerable to budget cuts and have long been terminated.

**Professor Paul Millar** (English), **Associate Professor Jane Buckingham** (History) and **Professor Steven Ratuva** (Anthropology and Sociology; Director, Macmillan Brown Centre

for Pacific Studies) also have research interests in aspects of peace studies, but do not currently teach in these areas. **Lucy Stewart** and **Kate Dewes** (DSC) also give guest lectures (unpaid) at the university.

**Disarmament and Security Centre:** Staff, Council members and volunteers are all heavily involved in promoting NPD education at this university and have long associations with it (as students and lecturers). Kate Dewes regularly presents to Anne-Marie Brady's Sociology classes and has also written a chapter with Dr Lyndon Burford for her recent book, "Small States and the Changing Global Order: New Zealand Faces the Future" Springer, 2019. Lucy Stewart (DSC Coordinator) has also been presenting to Professor Jeremy Moses POLS 201 course in recent years. The DSC has also just finished a large archival project of the DSC papers collected by Kate Dewes and Robert Green over decades of their work in disarmament and this has now been gifted as a collection to the Macmillan Brown Library at the University of Canterbury.<sup>13</sup> This collection has already been used at least 6 MA and 2 PhD students for their theses. The DSC has also offered many internships to students at UC who have worked on a wide range of projects and tasks and many have become interested in the subject as a result. Some internships have been included as a course requirement in some courses in POLS and History and students have been given credit for the work. The DSC also hosts a wide range of NPD resources on their website which are available for students to access and a small library of books and materials are housed at the DSC office, which are also available for students.

The DSC intends to establish a 'Disarmament Club' at the university in 2021 and is currently building a base of interested students through DSC events on campus and through the 'DisarmSecure' Mighty Networks online platform, to facilitate club registration next year. The DSC has a large network of potential speakers from around New Zealand and the world to speak at club events (virtually and in-person).

<sup>13</sup> Media coverage of the donation can be seen here:  
<https://www.youtube.com/watch?v=ilFuEBpLM1Y&feature=youtu.be>



- b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion': Law, Biochemistry.



Disarmament and Security Centre archival papers which have been donated to the University of Canterbury Macmillan Brown Library, November 2019.



DSC archives, received by the University of Canterbury Macmillan Brown Library, November 2019.

**Law: Professor Karen Scott** researches public international law and teaches LAWS324 Principles of Public International Law, but as with teaching of this course at other New Zealand universities, there is little time to address disarmament issues in the packed curriculum.

**Associate Professor Natalie Baird** and **Dr Christian Riffel** co-direct the Master in International Law and Politics, which would include some teaching on methods of warfare in its optional ILAP603 International Humanitarian Law paper.

**Biochemistry: Professor Renwick Dobson** manages the large Dobson Laboratory in the Department of Biological Sciences, which researches enzymes involved in infection and disease. We would like to investigate what teaching is conducted on ethics and preventing the hostile application of dual-use science in this laboratory and, ideally, in the wider STEM

disciplines at the university. This will be helpful in collating relevant material or cooperatively developing new course material that could be introduced, following outreach to senior academics in these disciplines, into relevant courses. Such teaching could be aligned to the university's 'graduate attribute' objectives, to strengthen the case for its introduction. Angela Woodward is a biological weapons policy and law specialist and is able to carry out this work in a follow-on research project.

**Summary:** Our research indicates that NPD is only taught in Political Science and International Relations (undergraduate only), and in recent years, with very limited supervision for study in taught Masters papers or at PhD level. This teaching is led by permanent academic staff with a minor research interest in humanitarian disarmament, as a very minor component of courses on wider issues. Most teaching and research assistance on NPD topics is provided by guest lecturers or adjunct faculty (unpaid) or on ad hoc, temporary teaching contracts (underpaid for the work performed). As NPD teaching is so sporadic, and with no permanent staff with a significant research profile in NPD issues, only a small number of students pursue NPD topics in their undergraduate or (taught) postgraduate research papers, or Masters or PhD dissertations. (This is also the case at other universities, even those with specialties in defence, security and strategic studies.) While we were not able to identify specific NPD-related teaching in the natural and physical sciences, mathematics, engineering or technology disciplines, we have identified an opportunity to follow-up with a relevant research laboratory in a follow-on research project. We consider potential NPD teaching champions at this university to be Dr Jeremy Moses and, on a voluntary basis, Angela Woodward. Angela Woodward currently holds no formal position at the university (she was formerly an Adjunct Senior Fellow in Law). (Note, Dr Kate Dewes intends to retire and will be less available to teach at the university, although students can still benefit from the huge DSC archival collection that has been gifted to the University of Canterbury Macmillan Brown Library.<sup>14</sup> )

<sup>14</sup> <http://www.disarmsecure.org/news-resources/a-story-of-the-dsc-archives>,  
<https://www.youtube.com/watch?v=ilFuEBpLM1Y&feature=youtu.be>



## G. Lincoln University

- a. Disciplines and courses currently teaching courses with an NPD component: **none.**
- b. Disciplines and courses which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion': **Agriculture and Life Sciences.**

**Agriculture and Life Sciences:** Associate Professor James Morton runs the practicum SCIE601: Laboratory Experimentation, which could usefully include a component on ethics and on preventing the hostile application of dual-use science.

**Summary:** We are not aware of any focussed NPD teaching at this university. There is likely suitable expertise to do so, and there are highly appropriate courses for such material to be taught, if it isn't already. Lincoln University is a special character university, with a focus on land-based sciences. Particular aspects of NPD teaching are highly relevant to the study of these sciences, in particular, preventing the hostile application of dual-use science and technology. We consider that there are many other courses at this university which could, if they do not already, teach on non-proliferation relevant to science and technology; further research is required. We have not been able to identify potential NPD teaching champions at this university.

## H. University of Otago

- a. Disciplines and courses currently teaching courses with an NPD component: **none.**

- b. Disciplines, courses and centres which may currently teach aspects of NPD (which we haven't been able to confirm yet) or which could add NPD components within the scope of their curricula, or which are taught by a 'disarmament champion': **National Centre for Peace and Conflict Studies, Politics, Centre for Law and Policy in Emerging Technologies, Bioethics Centre.**

**National Centre for Peace and Conflict Studies: Professor Kevin Clements** (Foundation Director; 20% workload) has research expertise in disarmament and arms control, especially small arms and nuclear weapons, but has not taught in this area at the university. He is the only academic affiliated with the centre with an interest in disarmament, but he likely does not have capacity to supervise any postgraduate research students. **Dr Heath Devere** (Director of Practice) researches peace and conflict studies, and created a course on New Zealand Peace History for Auckland University of Technology, which was cancelled due to low enrolment, but does not teach in this area at this university. We interviewed **Rosemary McBryde** (Administrator, who has now left the role) who informed us that the centre does not offer any courses on disarmament, nor do NPACS staff teach disarmament into other courses at the university. The centre has a taught Masters programme with papers on conflict resolution, peace education, development and peace building, and critical terrorism studies. The Politics department also offers a

**Politics:** We interviewed **Professor Robert Patman** who has broad research interests across international politics and security studies and has taught POLS250 International Security in a Globalising World, which could include aspects of NPD, but which hasn't been taught since 2017 due to staff shortages. Professor Patman supervises Masters students in the Master of International Studies programme and PhD students, and he noted he had supervised quite a few students researching disarmament issues including Dr Reuben Steff, now at Waikato University, on nuclear deterrence and Paul Winter, who will shortly submit his PhD thesis on nuclear policy and disarmament. He is interested in, and has capacity, to supervise additional students, although he noted that studying Masters by thesis is now very rare, with most students opting for the Masters by taught papers instead. Students taking the latter option may take a 20,000 research paper on an NPD topic, although PACDAC members may not consider these



students eligible for the full PADET Masters scholarship; many students are not even aware of PADET funding for research papers or projects on these topics. Professor Patman is aware of PADET but in his experience, such funding has been difficult to obtain. He noted that it would be helpful for PADET scholarships to be tailored to students undertaking a research paper on a disarmament paper as part of the Masters by taught papers.

**Centre for Law and Policy in Emerging Technologies: Professor Colin Gavaghan**

(Director) teaches LAWS428 Law and Emerging Technologies, which may address regulation of dual-use technology.

**Bioethics Centre:** Dr Mike King researches the ethics of bioscience and scientific research ethics, and coordinates BITC201 Bioethics and the Life Sciences, which may address relevant aspects of non-proliferation (further research is required) and if not, could usefully do so.

**Summary:** We are not aware of any focussed NPD teaching at this university, although there is supervision expertise and capacity in Politics, which has produced at least two PhD graduates with disarmament-related theses recent years. The lack of specific NPD teaching at this university, especially in the National Centre for Peace and Conflict Studies which arguably has a mandate to teach NPD issues, is highly regrettable. The paucity of teaching in disarmament issues in Politics is due to resource pressure, rather than a lack of expertise or interest. More students would be encouraged to research NPD issues, especially at postgraduate level, if PADET Masters funding catered for taught masters students rather than just masters by thesis. We were not able to identify specific NPD-related teaching in the natural and physical sciences, mathematics, engineering or technology disciplines; further research is required. We consider potential NPD teaching champions at this university to be Professor Kevin Clements, Dr Heath Devere and Professor Robert Patman.

## RECOMMENDATIONS

Tertiary teaching in non-proliferation and disarmament occurs primarily in the social sciences and law disciplines, with the most comprehensive courses taught by academics with a primary and sustained research interest in NPD theory and practice, and a public profile in NPD policy analysis. Other courses that include minor NPD teaching elements are taught by academics with a wider research profile within the discipline, of which NPD is only a minor part, or by guest lecturers, who are usually unpaid for this teaching work. There is a worryingly small number of academics with the expertise and capacity to teach comprehensive NPD courses at stage 2 and stage 3 undergraduate level and, in particular, postgraduate courses at Honours and (taught) Masters level, or to supervise Masters and PhD research in NPD topics. The absence of dedicated undergraduate courses, or significant NPD components in senior undergraduate courses, has stymied the flow of students taking up NPD research at postgraduate level and the number of New Zealand PhD graduates with capability to lead NPD research and teaching at New Zealand universities. The lack of a coordinated academic NPD collegial research community in New Zealand, to nurture new academics, and to encourage and supervise their development, including through publishing academic papers and presenting conference papers, also hampers their candidacy for appointment to academic appointments in New Zealand. Universities may overlook recent New Zealand PhD graduates with NPD specialisation for vacancies, in favour of foreign candidates with other specialisation and publishing and employment records that may be considered more prestigious. This may push New Zealand graduates offshore or into other occupations, and constrain their ability to contribute to and help to grow the New Zealand NPD academic sector.

There are also significant gaps in NPD tertiary teaching across New Zealand, in terms of the spread of comprehensive teaching across the eight universities, the number and type of relevant disciplines that teach pertinent aspects of NPD, and the paucity of academics with the expertise and capacity to teach NPD. Interviews conducted for this study confirm that there is a lack of time in busy courses to teach NPD issues, and a lack of expertise, interest or awareness of NPD

theory and case studies pertinent to each discipline, or of the value of perpetuating New Zealand's disarmament culture in successive generations. Also, the preliminary findings of this initial study indicate that there is a distinct lack of non-proliferation teaching in STEM subjects that involve dual-use science and technology that are capable of being misused for hostile purposes, or to cause harm inadvertently or negligently.

On the basis that NPD tertiary education should raise awareness of NPD issues to tertiary students and equip them to analyse and debate them, and train the next generation of academics, policymakers, regulators, politicians and researchers in NPD issues, this study proposes the following recommendations to strengthen the provision of NPD tertiary teaching at New Zealand universities.

1. Develop a network of academic champions (as identified in this report) that can: share curricula, teaching materials and discuss NPD pedagogy; champion the inclusion of NPD in courses across the university, including at senior management levels; foster an NPD academic community across New Zealand universities; and support academic publishing and conference opportunities for postgraduate students, and the employability of NPD graduates in the field.
2. Collate relevant course materials that are already available across a range of disciplines (social science, law, humanities and, where available, STEM disciplines) for use in current and any new courses, and promote these widely across New Zealand universities.
3. Develop relevant course materials that can be used to insert an NPD component in pertinent disciplines, that are capable of being taught by non-NPD specialist academics, or guest lecturers.
4. Engage with university departments to secure their support for the inclusion of NPD elements in relevant courses, including by guest lecturers, and especially in

departments where such teaching is currently minimal or non-existent (including STEM disciplines).

- a. Encourage the inclusion of an NPD component in core/stage 1 courses in relevant disciplines (small section).
  - b. Encourage the teaching of dedicated NPD-related stage 2/3 courses, to deepen the breadth of NPD teaching, and increase the stream of students heading for postgraduate NPD study.
5. Use the latent expertise and capacity in New Zealand (by experts who aren't employed by universities) to teach NPD courses and supervise postgraduate students in NPD research papers (at Honours, Masters and PhD levels). This would need to be paid, such as by PADET grants, or through an appropriately-funded DEUNIF allocation.
6. Fund the development of a full NPD tertiary course to teach in a social sciences discipline, such as Political Science/International Relations, to include course curricula, resources list, lecture outlines and PowerPoints, essay and exam questions. Ideally, it should be developed in coordination with the network of NPD academic champions and with the support of a 'home' university department that is willing to provide guidance on the format and requirements of new course applications considered for inclusion in the university calendar. This course could then be taught in a pilot trial, either by experts not currently employed by a university (around \$20,000 p.a.) or by an academic currently employed at a university. The course could then be developed further on the basis of this trial. Ideally, this course would continue to be taught annually. Course materials would be shared among the champions network, so that elements could also be included in existing courses.

7. Fund regular guest lectures, utilising the excellent latent capacity of NPD expertise based outside universities, to improve the provision of NPD teaching in currently taught courses. These are often currently provided for free.
8. Regularise and widely promote the provision of PADET Masters scholarship funds for students taking a Masters thesis, or a taught Masters course that includes a research paper on an NPD topic. The taught Masters research paper scholarship might be offered at a reduced amount to the current Masters scholarship to reflect that this research is approximately one quarter of a Masters thesis output, and in order to make more scholarships available and thereby incentivise more students to undertake such research.
9. Carry out a follow-on research project to assess how amenable STEM disciplines are to including pertinent non-proliferation teaching in existing or new courses. A pilot project could usefully focus on liaising with one department at one university, with a view to developing relevant course materials for inclusion in an existing course (such as on dual-use scientific ethics). For example, with the Biology Department at the University of Canterbury, due to the DSC's base in Christchurch.



Lucy Stewart and Angela Woodward present to the Canterbury Workers Educational Association, October 2019.