



THE UNIVERSITY OF
SYDNEY

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11 November 2022

Dr Helen Scott-Orr AM PSM

Chair, Expert Review Panel

c/- Veterinary Schools of Australia and New Zealand

Via email: veteducationreview@vsanz.org

Dear Dr Scott-Orr,

Thank you for the opportunity to contribute to [Rethinking Veterinary Education](#), the independent expert review of veterinary science education in Australia and New Zealand, which the Veterinary Schools of Australia and New Zealand (VSANZ) has commissioned you to lead.

The University of Sydney's **attached** submission has been prepared in close collaboration with the leadership of the Sydney School of Veterinary Science and our Faculty of Science.

We look forward to meeting with you and fellow members of the expert panel on 21 November 2022 to discuss the key issues and ideas emerging from the panel's review to date. To perhaps assist in focusing that discussion, we have attempted to distill some of the priority themes we have touched on in our submission. These are:

1. **Workforce:** sustaining a high-quality Australasian veterinary academic workforce and considering options for regulatory reform (paraprofessionals etc) to alleviate labour shortages impacting clinical staff recruitment and retention.
2. **Clinical education:** models for veterinary student clinical placements, including operating structures for animal teaching hospitals.
3. **Educational innovation:** options for ongoing quality improvement and efficiency gains in veterinary science teaching through innovation, knowledge sharing and other forms of collaboration (shared curricula etc) between veterinary schools and potentially with other disciplines.
4. **Research:** models for sustaining quality and national capacity for veterinary science research, including how to strengthen collaboration between veterinary schools, government research agencies and industry.
5. **Funding:** the funding framework for veterinary science education in Australia, and possible future directions for reform.
6. **Accreditation:** options for accreditation reform that maintain standards but improve efficiency and responsiveness to innovations in teaching and learning.
7. **Engagement:** steps that Australasian veterinary schools can take - individually and collectively - to engage more effectively with the veterinary profession and other key stakeholders in government, industry and the wider community.
8. **Advocacy:** options to improve the coherence, profile and political influence of the veterinary profession in Australasia.

Thank you once again for the opportunity to provide input to this important and timely review.

Yours sincerely,

(signature removed)

Professor Joanne Wright

Deputy Vice Chancellor (Education)

Submission to the Independent Review of Veterinary Education in Australia and New Zealand, November 2022

*Response from the University of Sydney, including the Sydney School of
Veterinary Science.*

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Responses to questions posed for deans and heads of veterinary schools

Veterinary education: structure, curriculum and teaching

- 14. Is there a place to develop a new kind of professional Australian and/or New Zealand veterinary qualification, which has modularisation/specialisation (e.g. companion animals, livestock, equine, poultry, exotic) options – whether at an early or post-primary-qualification stage – focussed on the requirements of the nation?**

While the idea of species-based veterinary training may be conceptually appealing, it would likely be logistically challenging to deliver a variety of focussed programs within each veterinary school in Australasia. The costs of training related to large animals are significant but would be likely to attract fewer students – making such an approach very difficult to execute or justify.

There may be arguments that each school could focus on an individual type or species-based training, but that approach would be likely to result in any school that did not focus on small animal training being challenged with respect to the recruitment of a suitable number of high-quality students. A holistic training program, with some minor specialisation between large and small animals, is the degree structure that is attractive to international students, whose fee contributions are currently essential to the sustainability of veterinary education in Australasia.

We also anticipate an ongoing community expectation that Australian veterinarians can treat the variety of common domestic and wildlife species that may be encountered in primary care practice. An overt species-based specialisation of training may not prepare graduates to meet that expectation.

The concept of some sharing of teaching between veterinary schools has been proposed for a number of years as one possible way of achieving efficiencies. However, the complexity of the different programs and the timing and integration of different areas of training is highly divergent and would need a level of coordination of all the respective school curriculums so that such an approach could be accommodated on a broad scale. That alignment of curriculum and timing may not best align with the locally available resources and learning opportunities, which each school has evolved, and would therefore need careful consideration and planning. This is, of course, separate to the issues around student load and international fees, with different schools

charging different fees due to different cost/ financial/ value models, which may become problematic with areas of identical training between schools.

15. Can we make changes of the kind described above and still retain the ability of Australia and New Zealand to contribute to a global, mobile veterinary workforce with mutual recognition of qualification and freedom of movement, and continue to attract overseas students and practitioners?

This is a key question in that while we have an Australasian focus, our schools are training veterinarians for the global market through mutual recognition of accreditation and global accreditation (noting not all Australasian vet schools currently have global accreditation). There would need to be clear agreement and alignment with the main markets for the veterinary workforce particularly North America, the UK and Europe. Without this, we risk constraining the flow of veterinarians between these jurisdictions.

Without an agreed change to accommodate species-based streaming at the graduate level, there would be an impact on the attractiveness of Australasian degree programs to the international student market. On a different issue, there is already an observable difference within the international student market in the attractiveness of DVM programs compared to BVSc undergraduate programs, with a DVM program being clearly more attractive.

16. Have veterinary schools enhanced their capabilities in online education during the COVID-19 epidemic and, if so, do these capabilities offer any opportunities to:

- **increase the accessibility of their education to off-campus students such as those in the workforce, those studying from offshore ('transnational education') or those in remote rural communities?**
- **enrich face-to-face learning experiences in the undergraduate curriculum?**
- **establish collaborations with staff with specialist subject-area expertise employed by other universities/organisations?**
- **build resilience in the face of disasters?**

The Sydney School of Veterinary Science (SSVS) and Centre for Veterinary Education have established continuing education programs via online delivery as a highly effective way of providing education to existing veterinarians located in diverse locations. This may range from postgraduate coursework degrees, such as the Veterinary Public Health Masters that produced over 125 graduates from 12 countries between 2003-2020, to continuing professional development (CPD) education ranging from one-off webinars to year-long courses.

With respect to veterinary training to become a registered veterinarian (i.e. DVM degree) the capabilities, expertise, infrastructure and processes to deliver aspects of veterinary education online have undoubtedly evolved through the COVID-19 pandemic, and have been applied extensively for the first time to the training of pre-registration veterinary students. These enhanced capabilities, as well as the cultural shift that was achieved for acceptance within the student and staff cohorts, can continue to be leveraged where appropriate to achieve efficiencies, and in some cases, a superior learning and teaching context. Further, when there are disruptions to curriculum delivery arising from natural disasters (e.g. floods), staff absences, challenges with staff recruitment, or other unforeseen impacts (e.g. industrial action etc), the platform, content and delivery mode implemented during COVID-19 lockdowns can be employed to manage through these intermittent challenges.

However, a considerable proportion of skills-based training relies on the physical performance of a skill or competency and includes real-time remediation, which is best achieved through on-campus delivery modes. Interaction and engagement with animals and specimens, along with educators and peers, is clearly difficult and in many respects, impossible to achieve virtually. For this reason, the University of Sydney DVM program recommenced on-campus practical classes with implementation of extensive COVID-19 safety protocols after COVID-19 lockdown periods and moved immediately post-pandemic to on-campus delivery mode for all units of study.

That is not to discount that some areas are more amenable to collaborations between veterinary schools and continued online delivery, including elements of pathobiology and diagnostic imaging that are aspects of veterinary training programs that can be delivered remotely. With the global shortage of veterinary specialists in several disciplines, online delivery offers the opportunity for one specialist to teach veterinary students across multiple veterinary schools. This is the current mode of delivery for radiology training in Years 1-3 of the University of Sydney DVM.

Of course, the clinical experience and the resulting skill and knowledge development that occurs from working in a veterinary hospital cannot be recreated online easily or authentically.

17. What other opportunities for veterinary education are yet to be grasped – from technology or elsewhere?

Teaching activities

At the University of Sydney, and likely in other schools, there is an ongoing review to identify efficiencies and innovations that might enhance or maintain teaching quality and learning outcomes while managing costs and other impacts on staff workload. One example is the growing use of skills hubs, teaching simulations and models to assist students with skill development, some of which can be conducted without direct supervision. These simulations and models have the added advantage of reducing the reliance on animals and animal tissues within teaching programs and allowing a new learner to focus on the skill or task, without the distractions and risks that interacting with a live animal present. These approaches are not without considerable cost however and require development of detailed instructional materials as well as maintenance of the consumable items and dedicated support staff to manage the hubs or laboratories. While some models and simulations are available commercially, many are developed in-house, which requires a detailed knowledge of the skill or task to be simulated. Looking to the future, we anticipate that virtual reality applications will extend the scope of laboratory-based skills learning to simulation of handling and procedures on animals.

The so-called 'flipped' approach to practical classes has also been used to provide required learner resources while reducing the direct contact time needed by staff. Under these models, preparation occurs prior to classes and students may be required to watch detailed demonstration videos before entering the class, so that they can focus on practising the skills elements of the training, rather than an initial introduction to the task. Empowering students and peers as formative assessors of developing skills has also been achieved through objective detailed itemisation of elements required to attain certain skills, to allow learners to identify and correct challenging aspects of each so they can be practised and reviewed independently of class time (e.g. suturing and other simple surgical skills). This serves to decrease the direct teaching contact time and staff workload, although the preliminary resource development also comes at a cost.

Assessment

Student assessment of skills-based technical competencies can also be reduced by using models or videos/images rather than prepared specimens, tissues or animals and these resources can also be reused as appropriate with respect to assessment integrity.

The growing use of online examination and online marking has in some cases also increased the efficiency and integrity of written examinations. At the University of Sydney, it is expected that online examination will remain with a transition to in-person invigilation of exams with students required to bring a device meeting certain specifications to the examination room.

18. Does online delivery pose any threats to Australasian veterinary schools? E.g., from overseas universities recruiting more Australasian students onto partially remote programmes? If so, how can these be mitigated?

As discussed above, due to the nature of much of the training, the capacity to deliver whole units or significant components of units online is not desirable. During the COVID-19 pandemic, where there was little other alternative, students did express a level of dissatisfaction that they were not able to practise skills and competencies in-person. They were also concerned about the limits on exposure and engagement with animals or animal tissues (e.g. Anatomy practical classes) and what this would mean for their future competency as veterinarians.

There could be elements of veterinary disciplines that might be taught online - such as the current teaching of radiology in this school and aspects of pathobiology taught through virtual microscopy. However, the ongoing need to demonstrate skills and the focus of existing accreditation programs on omnicompetence reduce the potential for a greater scale of online delivery of veterinary content.

19. How should veterinary schools address the increasing incidence of student mental health problems and support optimal student wellbeing?

Within the SSVS and the University more broadly, there is a significant focus on student mental health and wellbeing. This includes:

- Students learn about professional and personal development in The Veterinary Professional 1 and 2 units in DVM Y1 and DVM Y2 respectively and Veterinary Practice Management 3 unit (DVM year 3), including dealing with ethically challenging situations that can be sources of moral stress, moral distress or even moral injury for veterinarians.

- Clinical communication skills tutorials (DVM Y1 and DVM Y2) equip students to deal with challenging conversations (client interactions).
- A peer mentoring program (DVM 1 and 2) assists students to develop leadership skills, develop relationships and provides peer-to-peer feedback.
- The DVM mentor program in final year, matches students with veterinary mentors who provide support throughout their final year. These relationships are often ongoing.
- A School Wellness Committee which includes students and initiates activities focussed on mental wellbeing.
- From 2023, the inclusion of an open-response situational judgment test (CASPer) to help determine behavioural tendencies of applicants pursuing people-centred professions; as part of the admissions process into the BVB/DVM and DVM degree programs.
- University-funded and supported counselling services are available to students.
- School-based Academic Advisors are available to support students with academic progression issues and to identify and support students who are at risk of delays in academic progression.
- In 2022, there is an opportunity for all students to apply for simple extensions on assessments (five days) to assist in managing student challenges.

One of the key issues is to balance the development of these personal skills against the technical and professional skills which continue to be central to the veterinary training programs.

20. Should the process of admissions be reviewed? Would a combined Australasian approach to admissions provide efficiency savings and enhance opportunities to increase diversity in both the applicant pool and those admitted.

The implementation of a unified application system similar to that used in the United States (Veterinary Medical College Application Service - VMCAS) might be considered. While this may be more convenient for students in terms of submitting applications, local processes for enrolment in each university would still need to occur. There could be some benefit in alignment of some pre-approvals for key preliminary prerequisites from different universities. One challenge requiring consideration is the desire for admissions to expand beyond the current sole focus on academic criteria. This typically introduces complexity, which comes with a significant amount of manual engagement with the enrolment process by academic and administrative staff (CASPer, commitment statements, review or prerequisites etc). The incorporation of representatives of the profession (external to the University) on admissions committees also impacts the speed and efficiency of the admissions processes.

Focussed admissions schemes to increase diversity and inclusion also typically require a significant amount of academic and administrative engagement which impacts efficiency. If an approach could be developed to achieve similar outcomes, and which did not require high-level academic or administrative judgement on each application, this might provide some benefit to the admissions process.

Research

21. How important is the nexus between a veterinary school's research capability and its capacity to educate veterinarians suited to the modern workforce?

The research undertaken by academic staff within veterinary schools has long played and continues to play a significant role in the teaching practice for training future veterinarians. There are numerous instances where past or ongoing research is utilised as part of the teaching mission and provides expanded knowledge, credibility of expertise and forms the central tenet of evidence-based practice. Academic staff commonly teach and research in the same discipline and are consequently typically much more knowledgeable in that discipline beyond just the knowledge that is engaged with as part of the teaching endeavour. Research also commonly provides expertise, skills, knowledge, samples, specimens and other resources that are also used in teaching.

The Research and Enquiry stream within the University of Sydney DVM program is an important aspect of the training undertaken. It upskills students to interpret the findings and limitations of published research, develops research questions and provides the knowledge and skills required to test those questions. This approach empowers students to be confident in their use of primary research-based evidence to support clinical practice.

While not a key driver, it is also noteworthy that the key university subject rankings schemes (QS and ARWU) both utilise research metrics to form the majority of the ranking assessment. These rankings are important for

international and national student recruitment but also for the standing of the school within the international landscape, which can influence opportunities for further research partnerships, grant competitiveness and even staff recruitment.

Importantly, the pathway for academic staff career development is classically through a research degree pathway (PhD) and the practice of research can often be a very personal aspect of an academic's role. It is also an important point of differentiation for many clinical specialists who seek employment at a university, rather than seeking employment in a private specialist practice due to the particular emphasis on research opportunities and support for research (cultural, financial, resourcing) that are provided within a university environment.

22. How important is the research of veterinary schools to securing Australasia's future in 'One Health', biosecurity, food production and animal welfare?

As detailed in our other responses there is a clear benefit to undertaking research within veterinary schools to support the overall academic mission. Research focus areas including One Health, biosecurity and animal welfare commonly draw on a breadth of discipline expertise within and beyond the veterinary schools into other university schools and faculties but also with industry and community engagement. Universities are well-positioned to facilitate genuine objective transdisciplinary collaborations and most universities have developed multidisciplinary research institutes (MDI) and centres for key research areas.

The alignment of fundamental disciplines with the clinical activity and application of evidence-based practice is likely unique to veterinary schools and, as such, positions them to be able to address these complex areas of research. If veterinary schools were to decrease or withdraw from veterinary research this would significantly diminish the ongoing innovations that have been achieved by Australasian veterinary schools.

23. Could the research performed by veterinary schools be performed by other organisations?

With the appropriate will and funding, more of the research currently performed by veterinary schools could be undertaken by other organisations. However, we question whether doing so would be strategically desirable for the region. Building on (or learning from) existing successful State or regionally-based partnership models between governments, universities and industry in Australia and overseas may offer a better way forward for achieving efficiencies and strengthening the region's animal research capability.

Australasian veterinary schools, including Sydney's, have long-standing traditions of undertaking research related to animals and animal systems, in collaboration with government, industry and other partners. In Australia, some of the main organisations that could potentially conduct more research include: the CSIRO; parts of the Commonwealth Department of Agriculture, Fisheries and Forestry and the agricultural development branch of the Department of Foreign Affairs and Trade; the animal-focussed statutory and industry-owned Rural Research and Development Corporations; and the State Departments of Primary Industry/Agriculture. However, we note that some of these entities operate primarily as funding sources of research aligned to their priority interests rather than run their own scientific research facilities and employ staff.

Universities are by their nature well-equipped to propose, support, and administer objective research in accordance with an increasingly complex multi-jurisdictional regulatory environment. Critically, universities provide objective and independent research outputs through ethics-ratified study designs and strict internal governance systems (including for research funded by philanthropy or industry), seeking to ensure that all animal research and related activities occur in accordance with all relevant laws and guidelines, and with perceived or actual conflicts of interest identified and managed appropriately.

Universities typically also have access to a wide range of government and industry research funding sources as well as opportunities for philanthropic support for research which other organisations may not be able to access. Due to those additional opportunities, universities, and the veterinary schools by extension, can engage in a spectrum of research - from fundamental through to very applied research - which again may not be achieved in other existing research organisations.

Leveraging infrastructure and research support services at scale; providing ready access to multidisciplinary expertise and equipment; sharing across faculty boundaries in cognate disciplines (e.g. science, medicine, agriculture, the social sciences) and the ability to incorporate the latest research, knowledge and innovative thinking into veterinary workforce education and training are key aspects of the value-add that flow to Australasia's animal and human health systems (and critically biosecurity threat preparedness) from university veterinary schools maintaining strong research and research training capabilities.

We emphasise that the diversity of related disciplines and blend of academic paraclinical and clinical activities and the animal resources that are available through veterinary schools are also unique as they support the education role of the schools but also form a unique framework for research which is, similarly, unlikely to be found in other research organisations.

24. What could be done to optimise the education / research mix of veterinary schools?

The tensions between teaching/research/governance and clinical service have long been managed through bespoke workload planning with individual staff to balance the needs of the school/university with the career aspirations and academic interests of the individual academic staff member. Workload models and policies can provide a framework for those discussions, but they are at their most impactful when all aspects of workload as well as personal circumstances and career goals can be considered.

As detailed above, the engagement in research ultimately enhances the educational delivery to students and so that balance remains critical. Other opportunities including sabbatical leave, research fellowship funding and support for grant application (co-funding, administrative support, grantsmanship advice etc) are common within university settings to support research endeavours of staff.

Arguably, the optimal balance between teaching and research for an individual staff member is variable and dynamic and the balance at a whole-of-school level between research and teaching is a key management task for the respective Head of School and dependent on staffing levels, research opportunities and school and university strategy. Vital aspects that need to be addressed as a shared responsibility between the leadership of veterinary schools and their universities include: the long-term attraction and retention of veterinary professionals interested in academic careers or contributions to teaching and research as affiliates; supporting individual staff development; mentoring towards promotion, advancement and leadership; and preparedness for career opportunities within and outside academe.

One critical element that would support veterinary schools' pursuit of the optimal mix of education and research would be to increase 'base funding' (combination of Commonwealth and Student contribution amounts) to achieve financial parity with the cost of educating each veterinary graduate. As we detail in our response to the next question, funding linked to Commonwealth-supported domestic students results in a significant financial loss to the University of Sydney and other Australian veterinary schools. While funding is supplemented by the addition of international students and other revenue generating activities, this is insufficient to balance the full costs of delivering programs for domestic students to the standards required by the accrediting bodies. The resulting deficit is covered by the University more generally but places each school under financial liability, and does not help to abate the national veterinary shortage, given most international students return to their country of origin.

Responses to questions posed for vice-chancellors and university central administrations

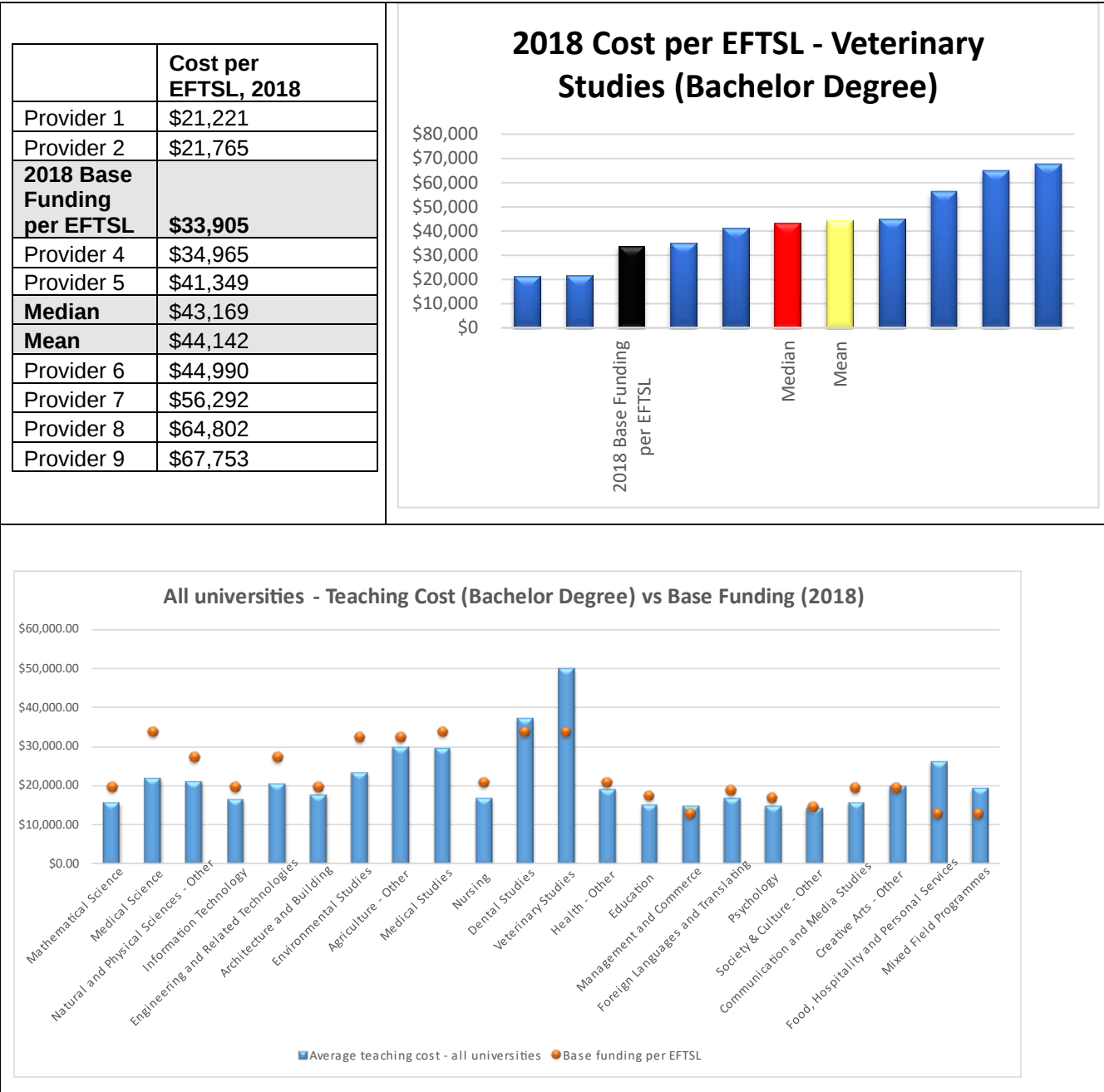
The cost of veterinary education

The most recent 'transparent costing exercise' conducted for the Australian Government by Deloitte in 2019³ showed that the average cost to deliver the veterinary undergraduate course, per Equivalent Full Time Student Load (EFTSL), was 149 per cent of the funding received by the university from government and student fees.

25. What are the consequences to the university of the cross-subsidisation required to address this funding deficit?

Update on the Australian Government's transparent costing exercises

Before answering this question, we feel we need to provide the expert panel with an update on the status of the Australian Government's transparent costing exercises. The VSA NZ discussion paper is referring to the latest 'Transparency in Higher Education' costing study report that is publicly available. That report, published by the Government in April 2020, covered universities' costing estimates for teaching and scholarship for the 2018 academic year, with 32 institutions participating. For ease of reference, we provide the cost of delivery data for undergraduate 'veterinary studies' per Equivalent Full-Time Student Load (EFTSL) contained in that report.



Source: see [here](#) for relevant summary data and [here](#) for the full Deloitte report.

The former Australian Government then used these and other results from that costing exercise to help inform the setting of the new ‘base funding’ rates for units of study in all fields of education in its [Jobs-ready Graduates \(JRG\) Package, announced in June 2020](#). That package [passed Parliament in October 2020](#), with the new funding rates applying from 1 January 2021.

The JRG Package’s funding changes resulted in the first substantive net funding increase for Veterinary Science, Medicine and Dentistry units of study in more than a decade (+\$2,499 per EFTSL from 1 January 2021 compared to 2020). This took total base funding for units in these fields to \$38,300 in 2021. In 2023, following two years’ indexation, the base funding rate will be \$39,996, comprising annual Commonwealth and student contributions of \$28,196 and \$11,800 respectively (see [here](#) for details).

Following a pause on the transparency in higher education teaching reporting requirements during 2020 and 2021 due to the COVID-19 pandemic, all Australian universities were required to submit their data covering 2019 and 2020 by February 2022. The new Australian Government is yet to publish the results of these studies and has not confirmed its plans for the future of this costing exercise. However, we have our submission data and have participated in benchmarking conducted by the chief financial officers of Go8 universities. Based on that information, we confirm that the costing outcomes for veterinary science units in 2020 at the University of Sydney and some of the other Go8s with veterinary schools, continued to show results broadly in line with those contained in the latest data published by Deloitte (covering 2018). However, we strongly caution the expert panel against relying too heavily on the results of the Deloitte costing exercises because of substantial differences in

the data and necessary assumptions different universities used to produce their costing estimates, as well as serious limitations in the methodology Deloitte has applied in both collecting and analysing the data. For example, their costing methodology and presentation of the resulting data ignores differences in the quality of the educational experience and graduate outcomes between institutions and treats all universities the same regardless of their size, course and student profiles, and campus locations.

The consequences for the University of Sydney of the veterinary science funding shortfall

With that context in mind, the consequences for us of the significant funding gap that the Deloitte costing studies have confirmed for our veterinary science academic programs for more than a decade are predictable and far from unique among Australian veterinary schools. We are, for instance, forced to:

- Constantly identify and implement strategies across all aspects of the business that keep our costs as low as possible, while keeping academic standards and the quality of the student experience as high as possible, and satisfying both Australian and international accreditation requirements. For example: relying on the profession/industry to support student learning for Year 4 extramural placements (half of final year placements) with the only recognition being access to subsidised Continuing Professional Development (CPD) offerings; constraining research activities of staff; diverting teaching effort to other degree programs to increase overall student load per FTE; increasing reliance on contract teaching for some disciplines; increasing use of simulations instead of access to animals or animal tissues; and taking steps to bring staffing costs within the teaching hospital into closer alignment with its revenues.
- Identify and develop alternative sources of income that can be applied to fill the funding shortfall. For example: enrolling international students in the veterinary program but also other disciplines; offering professional development and other non-award courses; restructuring courses to graduate entry to permit the enrolment of some full-fee domestic students; pursuing philanthropy and other sources of revenue.
- Where possible, plugging any remaining budget gap with revenues that are diverted from margin-generating university education programs delivered by other faculties or schools, and if necessary from other income sources available to the University.

We stress that the veterinary science program at the University of Sydney is not unique in facing a significant and longstanding gap between the full delivery costs and the available base funding. The disciplines of medicine, dentistry, agriculture, and the creative and performing arts are some of the others where we experience constant funding shortfalls. A key difference between veterinary science and the medicine and other human health disciplines, is that Australian veterinary schools, including at the University of Sydney, have tended to operate their own clinical teaching hospitals. In contrast, the human health disciplines, where student clinical placements are delivered through a diverse range of models, but with most involving a substantial unpaid supervisory contribution made by health professionals operating in public, private and community-based settings, and with Commonwealth, State and Territory Governments also committing substantial extra funding for health clinical placements under the terms of the National Health Reform Agreement, medical student loading under university funding agreements, the Rural Health Multidisciplinary Training (RHMT) Program and other initiatives focused on pre-registration health professionals.¹

Finally, it is important for the expert panel to note that the need to cross-subsidise core university activities is not limited to teaching in various disciplines. In fact, Australia's research-intensive universities face arguably far greater challenges covering the full costs of sustaining their research. For example, at Sydney we estimate that, university-wide, our research funding shortfall in 2021 was around \$750 million or about \$1.50 for every dollar of dedicated research funding we received from external sources. The Job-ready Graduates Package has exacerbated the situation by effectively removing the previously recognised research component of university base funding, while substantially reducing base funding per student in some disciplines and per student overall by around six per cent.

26. If Government increased the funding rates for veterinary education, would that funding boost be invested in enhancing the quality and accessibility of veterinary education and the excellence and relevance of veterinary research, or would it be used for other purposes?

Intuitively, an increase in the base funding rate for veterinary science education in Australia should flow through to funding boosts for veterinary schools. Unfortunately, however, this outcome cannot be guaranteed and may in

¹ <https://www.health.gov.au/initiatives-and-programs/2020-25-national-health-reform-agreement-nhra>.
<https://www.health.gov.au/initiatives-and-programs/rhmt>

fact be unlikely because of the way that Australia's [Commonwealth Grant Scheme](#) operates. The reasons for this are perhaps best illustrated by an example:

- The [Commonwealth's current funding agreement with each university](#) caps the amount of funding the Commonwealth will provide an institution each year, linked to Cth-supported students enrolled in 'non-designated' courses (all courses except medicine) and a performance funding component. The University of Sydney's so-called Maximum Basic Grant Amount (MBGA) will be \$274.2m in 2023.
- The University 'consumes' the MBGA by enrolling students in four '[funding clusters](#)' for which the Cth and student contribution amounts differ substantially. For example, each Equivalent Full-Time Student Load (EFTSL) we enrol in Cluster 1 (Law, Accounting, Administration, Economics, Commerce, Communications, and Society and Culture) consumes just \$1,147 of our MBGA. Meanwhile, each veterinary science EFTSL will consume \$28,196 of our cap.
- If we exceed our MGBA for 2023, **we only receive the average student contribution amount for EFTSL enrolled above the cap.** Students in Cluster 1 pay \$15,142 in 2023 compared to veterinary science students who pay \$11,800. **Put another way, we can enrol almost 25 Cluster 1 students for the same impact on our MBGA that enrolling a single veterinary science student has, and for those 25 Cluster 1 students we would receive around \$378,000 in student contributions each year for the duration of their studies, compared to just \$11,800 for the single veterinary science student.**
- For universities that receive strong demand for students (especially those likely to reach or exceed their MBGA), the CGS funding system strongly incentivises them to enrol more students in the lower-cost funding clusters and those where the student contributions are highest.
- Whether an increase in the funding rate for veterinary education would result in a funding boost for veterinary schools therefore depends on many variables unique to each institution's circumstances. This includes each provider's approach to load planning and internal budget setting, as well as year-to-year fluctuations in demand for its different course offerings from students seeking Cth-supported places, as well as from full-fee paying international and domestic postgraduate students.
- Perversely, due to the interplay of the factors discussed above, simply increasing the Cth contribution for each veterinary science EFTSL may well result in a net cut in the base funding available to the University. However, asking Cth-supported students to bear the costs of any funding increase may have the opposite effect and make it more likely that the veterinary school receives funding boosts through their University's budget process.

27. The funding deficit of veterinary science has been known about for many years. Why do you think Government hasn't addressed this deficit?

There have been various intersecting factors at play, including:

- Successive Australian governments - since the Dawkins' reforms to Australian higher education of the late 1980s - have sought to expand domestic students' access to higher education by gradually transferring more of the total cost to them. This strategy has been successful, with 53 per cent of 25-34 year-olds holding a tertiary qualification in 2019, well above the OECD average of 45 per cent. Meanwhile, Australian Government expenditure on higher education (including Research Block Grants, but excluding expenses related to the Higher Education Loan Program) has declined from 2.4 per cent in 2001 to 1.63 per cent in 2022, as a proportion of all Commonwealth outlays.²
- Governments of both persuasions have also implemented policies including tuition fee-caps, regressive indexation, 'efficiency dividends', reductions in funding for full research costs, and cuts to funding programs for research and teaching etc. Whether intentional or not, the combination of these measures has forced Australia's public universities to pursue funding from other sources (most significantly through enrolling international students) to meet their rising operating costs and to remain competitive. For example, in the 1980s, many Australian universities received 90 per cent or more of their funding from

² Commonwealth Treasury, Final Budget Outcomes and 2022/23 Budget Paper 1, Productivity Commission, [Interim Report 5 – From Learning to growth](#), 2022, p.9

the Commonwealth. Today, the University of Sydney receives well under 30 per cent of its annual income from the Commonwealth and over a third of its revenues from international students.

- Changing the base funding rates payable to higher education providers is very difficult to do because both the Cth and student contribution amounts are set by legislation (the *Higher Education Support Act*). For example, the [Base Funding Review of 2011](#) recognised the extent of the funding gap for veterinary science and other high-cost fields of education (medicine, dentistry, agriculture etc) proposing a 25 per cent funding increase, while each Deloitte costing study has confirmed the scale of the funding gap facing veterinary science programs. Nevertheless, the passage of the JRG Package in 2020 was the first time in more than a decade that changes were made to the per EFTSL funding rates, with at least three previous attempts at major legislative changes failing to pass the Senate between 2014-17. Moreover, we are not aware of any Government ever making changes to the funding rates for a single field of education or cluster of fields with similar cost profiles.
- Veterinary science funding shortfalls have been well-known and understood by the Department of Education and successive ministers for education. However, universities have continued to find ways of offering veterinary science education under the prevailing funding rates, while some new schools have also opened. Despite the funding shortfalls, governments have not been presented with a scenario of crisis or the prospect of any veterinary schools needing to be closed due to becoming unsustainable. Universities may, inadvertently, have reduced pressure on the government to increase funding for veterinary science and other high-cost programs by being so successful and evidently willing to sustain the operations of their veterinary science schools with funds earned from other activities.
- Finally, we would observe that the advocacy network for the veterinary system (accrediting bodies, peak bodies, chief vets etc) generally does not appear to have the same coherence and prominence in public and policy debates, as their colleagues leading and representing other professional disciplines of national significance. Strong public advocacy and media reporting of the skills shortages facing professions like medicine, teaching, nursing and engineering is commonplace and has recently gained traction with various governments. Meanwhile, there appears to be less public and political awareness about, or interest in, addressing the severe workforce challenges impacting all elements of Australia's veterinary system – including the ability of Australian veterinary schools to recruit and retain high-quality staff interested in academic careers.

28. Do you feel that the needs of accrediting bodies put unrealistic demands on the University in relation to the cost of facilities, required staff: student ratios, etc?

While many of the accreditation requirements are designed to provide a framework of expectations with respect to graduate skills and abilities defined as Day 1 competencies, much of the costs are incurred through staffing requirements (staff/student ratios), the directive requirements relating to caseload/student, and the diversity of cases including species and pathology (post-mortem) experiences per student. The (extramural) preclinical and (intramural and extramural) clinical experiences are also prescriptive and relate to time spent on the task rather than quality of experience.

Staff to student ratios do not acknowledge contemporary learning and teaching practice and often the loss of a small number of staff, or delay in recruitment at the reporting date for accreditation, can dramatically impact the opportunity to meet the acceptable ratio. This in no way relates to student learning experience or learning outcomes.

The current ratio-based prescriptive approach does not allow for the unique opportunities that may be available to an individual school or the opportunities for blended approaches to achieve learning outcomes. An example of this is the requirement of eight weeks of preclinical/industry-based experience on farms, where students often receive variable learning opportunities that come with some level of student cost. In addition, there is a need for a large student placement infrastructure within the University that is also costly to maintain. Importantly, the most recent proposal from the RCVS in the UK is to introduce a reduced requirement for EMS and that it be more flexible and tailored to a student's learning needs. A similar approach might be considered for AVBC accreditation to reduce costs of EMS to both students and universities.

Further, an additional cost of accreditation is the provision of contemporary standard specialist facilities. Meeting the operating costs related to the specialised nature of veterinary teaching hospitals, animal handling facilities for the diversity of species including large domestic and farm animals as well as facilities such as anatomy and pathology facilities (post-mortem facilities), are significant. While

specialist facilities are not unusual within universities, the diversity of other degree programs that can utilise these facilities are limited.

Research/teaching labour models

29. Do you foresee any changes in the labour model used in professional schools like veterinary science e.g. a move away from an exclusive reliance on traditional research-active academic roles towards a variety of other career paths such as:

- Part-time, fixed-term roles (including contractors rather than employees);
- Teaching-only or heavily teaching focussed pathways;
- Research-only or heavily research focussed pathways;
- Clinical service-teaching roles;
- Non-academic management roles; and
- Outsourcing of clinical teaching to private practices.

Currently, there is no specific decision to focus on a divergent recruitment strategy within the SSVS. The enterprise agreement (EA) for each university very likely has an impact on the recruitment strategy for each veterinary school. In the SSVS we have seen some increase in education-focussed clinical academic staff, as that definition fits their clinical teaching roles more closely than a traditional academic position. Teaching-only or research-only roles (apart from externally-funded positions) are not used in SSVS with teaching-only staff not allowable under the EA. All clinical professional veterinarian roles within the teaching hospitals have a teaching requirement in their position descriptions although defined differently to academic roles.

Outsourcing of clinical teaching commonly results in a decrease in learning experience. To seek an alignment with the academic mission and commercial imperative, SSVS is currently investigating the feasibility of a service provider to run the 'onsite' specialist referral practice as a private practice with service provider staffing, but with embedded academic staff to maintain academic rigour and teaching support within the commercial 'on-campus' specialist practice. In this model the University would retain ownership of the co-located primary care practice.

To further assist the expert panel in thinking through these issues, we have **attached** to our submission some high-level data showing key trends in Australia's academic workforce over the last 20 years, with a focus on the impact of the COVID-19 pandemic in 2020 and 2021. These charts are based on publicly available data collected and [published by the Department of Education](#). They were prepared by Emeritus Professor Alan Pettigrew as part of a presentation he gave to an Australian Dental Council (ADC) roundtable on the dental workforce on 25 September 2022. We are grateful for Professor Pettigrew giving us permission to include his slides with our submission and highlight the following points of possible interest:

Slide 1

- The steady rise over the last 20 years in the numbers and proportions of research-only academics in Australian universities and more recently in teaching-only staff.
- The different impact the pandemic had on teaching-only, research-only, teaching and research staff, with research-only staff the least affected.

Slide 2

- The 38 per cent increase in 'veterinary studies' EFTSL (domestic and international) that occurred over the decade to 2020. Unfortunately, the staff data for the broad disciplines (such as Health and Natural and Physical Sciences) are not disaggregated into subdisciplines. The data nevertheless suggest that the rate of growth in veterinary student numbers has been much higher than the rate of change in academic staff numbers in this discipline. There may be value in the expert panel seeking to obtain from Australasian veterinary schools, their data showing the trends in student and staff figures over the last decade.

Slide 3

- The early impact of COVID-19 - the percentage change in full-time and fractional full-time academic staff by category and Australian university for 2020-21. Some interesting differences are apparent.

Slides 4 - 7

- National trends and year-on-year impact of COVID-19:

- **Teaching and research** academic staff (excluding casuals) by academic level – male and female 2017-2021 **(Slide 4)**
- **Research-only** academic staff (excluding casuals) by academic level – male and female 2017-2021 **(Slide 5)**
- **Teaching-only** academic staff (excluding casuals) by academic level – male and female 2017-2021 **(Slide 6)**
- Casual academics **(Slide 7)**.

30. If so, do you have any views on the pros and cons of these non-traditional career pathways?

Within the SSVS we have utilised a strategy of transferring clinical specialists from a professional career pathway to an academic pathway with the aim of refocussing on the academic mission but also as a means of staff retention. In some cases, this has been successful but in others it has been difficult for staff to adapt to the differing requirements of an academic role, and in particular, the research requirements of academic staff within a research-intensive university. A number of these staff continue to require significant support to develop the breadth of their academic responsibilities.

There are various challenges in considering non-traditional career pathways, for example:

- Education or teaching-focussed appointments can in some cases be perceived as less desirable for academic staff who have entered the academic workforce through a traditional research-based higher degree pathway.
- Non-traditional pathways can be impacted by university academic promotions processes that are typically generic and often do not explicitly address clinical roles within the promotion criteria.
- Academic pathways for clinical staff are impacted by the current wage disparity between private practice recruitment for specialists and university EA pay scales (university pay scale is often less than half of that offered by private practice for a registered specialist).
- Academic staff who do not undertake research can often find it difficult to maintain contemporary standards or knowledge.
- All of the discipline-based (Veterinary Science) university rankings metrics used by international students for recruitment rely heavily on research metrics for the staff cohort including average citations and other averaged research performance indices, so an imbalanced staffing cohort not undertaking research would have a significant impact on those subject rankings.

31. What are the main impediments to their uptake?

As detailed above, the inclusion of contractors, education or teaching-focussed staff, or of non-academic clinical staff can be problematic, as they may have reduced contribution to research outputs, which can impact on perceived desirability of these appointments or perceived impact on opportunity for academic progression. University academic progression policies often do not explicitly address clinical performance in the criteria for promotion, which can impact the perception of value of those roles within the broader academic context. Research outcomes, or lack thereof, also impact University subject rankings performance.

University enterprise agreements would need to address these issues explicitly to facilitate implementation and enhance recruitment which is particularly challenging given the wage disparity with private practice already detailed.

32. Can the research-teaching nexus be protected when utilising these new career paths? E.g., by teaching teams including a research-active academic?

There are theoretical scenarios where the discipline teams may be large enough to have stratified employment profiles, with senior academic staff leading research and teaching activity, and more junior academic and professional veterinarians supporting teaching and caseload generation. So, while it could be achieved, the current tight labour market for veterinarians typically means that this rational design of staffing profile is very difficult to achieve in practice. It is not uncommon for clinical roles - both academic and professional - to be advertised and receive no applications.

33. Can research quality and intensity be maintained when utilising these newer career paths?

As detailed above, it is unlikely that research quality and outputs can be maintained with the outlined non-traditional career paths. The traditional academic career model via a research-based higher degree is an essential training pathway for academic staff to become independent researchers. Residency training programs do have some research component, however, few specialists, post residency, are able to then continue their personal development as researchers to become independent without some level of additional support with some progressing to PhD by research.

34. Can international reputation be maintained when utilising these newer career paths?

As stated above, the reputation of veterinary schools is commonly aligned with the subject based ranking schemes released annually. These rely heavily on research metrics to form the rankings along with employer and academic reputation surveys which are completed by a small cohort and have a less significant weighting on the final ranking.

35. What are the consequences of these newer career paths on staff wellbeing and career development opportunities?

As discussed, while education-focussed roles are becoming more common and the academic pathways more defined and supported within universities, there can be a lingering perception that these roles are less desirable amongst academic staff who have entered the academic role through a research-based higher degree. Contractors do not participate in the full spectrum of academic activity and do not form a relationship with a veterinary school that might be leveraged for academic career development. Outsourcing of intramural rotation clinical teaching to private practices also diminishes the academic roles of university-employed clinical staff who have trained to be both clinicians and academics, if their ongoing clinical activity is diminished. Clinical service teaching roles can be problematic as they might fall within the professional staff category of employment which does not have the same career advancement opportunities as the academic employment pathways.

Efficiencies

36. Are there any other changes to veterinary education the University would recommend to improve cost-effectiveness and reduce the tuition subsidy and fee burden on government and students, respectively?

Notwithstanding the University of Sydney's longstanding and continuing focus on cost containment in veterinary science education and research, as discussed above (q.25) we know that our average cost of delivery per veterinary EFTSL remains well above the total base funding that is available to us. We therefore see limited additional options to further reduce educational delivery costs, with the current labour market and inflation spike exacerbating the challenges we face.

Nevertheless, potential areas where efficiencies or other improvements could be realised, include:

- Collaborations between veterinary schools and State departments of primary industries/agriculture to build critical mass in education, research, research training and knowledge translation.³ Here we note, however, that the geographic spread and distances between veterinary school facilities in Australia present many practical challenges in terms of achieving co-location and face-to-face engagement.
- Implementing alternatives to the traditional owner-operated model of veterinary teaching hospitals, suitable for each veterinary school (or grouping of schools).⁴
- Targeted funding reform for veterinary science education, recognising the critical importance of the veterinary profession and R&D capacity, and that unlike the human health professions, veterinary student clinical placements receive no funding support from the Commonwealth and State/Territory governments through the public health and hospital system. For example, in 2022-23 the Commonwealth alone will provide the States and Territories with more than \$2 billion in funding as its contribution towards teaching, training and research in the public health system, which includes clinical

³ <https://www.utas.edu.au/tia>

⁴ Frazer Allen, [Veterinary Clinical Education Delivery Models: A Conceptual Framework](#), Journal of Vet. Med Education, June 2022, 49(3):290-296

supervision for pre-registration medical, dental, nursing and allied health students.⁵ Additionally, the Commonwealth provides universities with additional funding to support student placements in medicine and other clinical disciplines, including through the Rural Health Multidisciplinary Training (RHMT) Program and the national network of regional, rural and remote health training sites it supports.⁶

- Development of high trust accreditation methodologies and reducing the directive input/time on task approach to placements.
- Consider the costs of accreditation compliance and reporting particularly the significant costs associated with preparation for and hosting of site visits.
- Consider a shared curriculum and delivery of specific discipline areas which are commonly difficult to staff (e.g. didactic teaching in diagnostic imaging).
- Ongoing review of teaching delivery methodology including appropriate use of 'flipped' class approaches to manage staff contact hours but balanced with expectation of increased student preparation.
- Consideration of altering legislation for acknowledgement and recognition/ registration of Vet Tech or similar paraprofessionals so that they can be utilised in the veterinary industry/ universities to alleviate the labour shortages that impact clinical staff recruitment and retention by decreasing competition for registered veterinarians.

Appendix Emeritus Professor Alan Pettigrew, *High level data on Australian university staffing trends, 2000-2021*

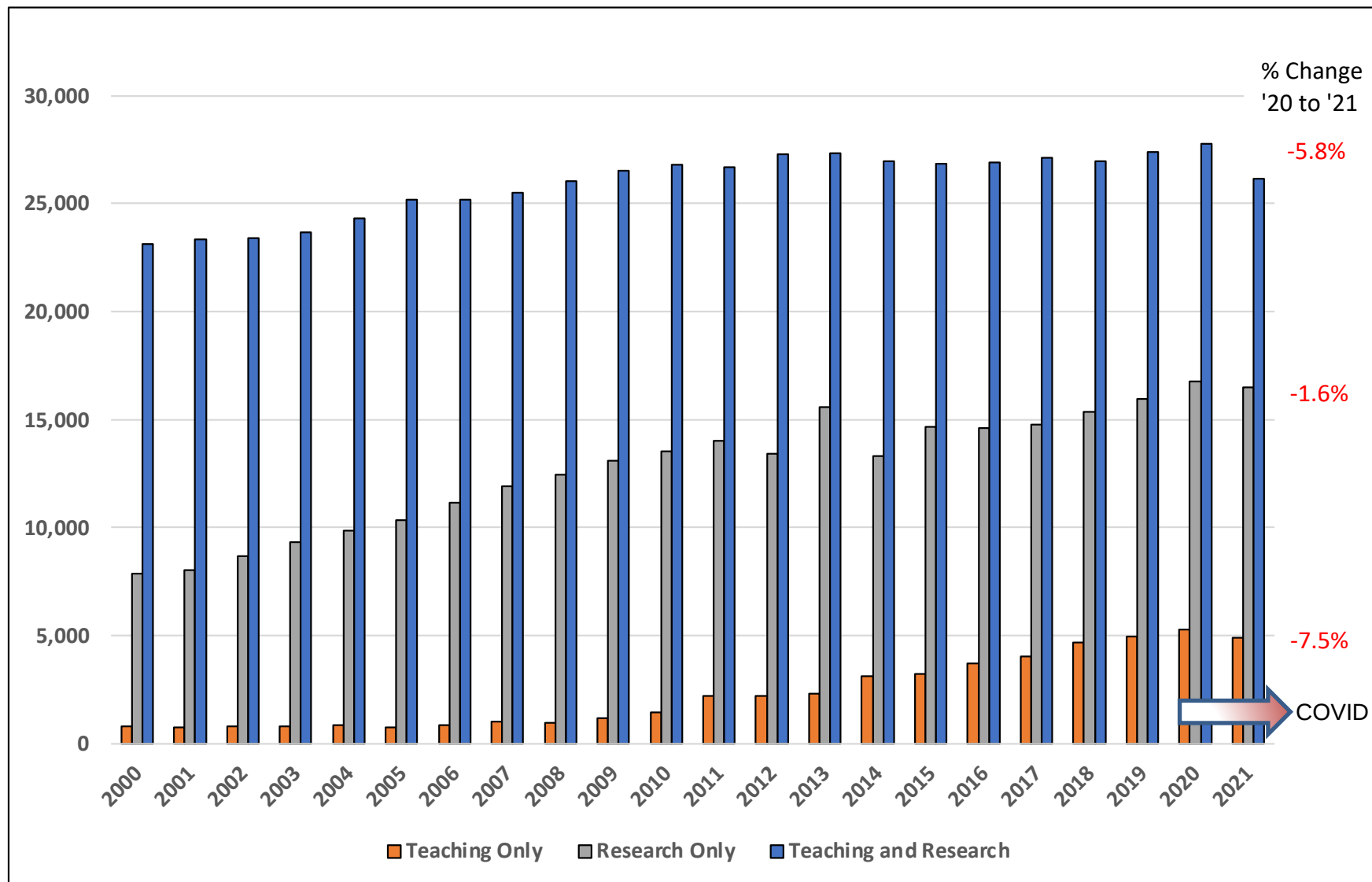
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⁵ <https://www.ihacpa.gov.au/resources/national-efficient-price-determination-2022-23>

⁶ <https://www.health.gov.au/initiatives-and-programs/rhmt>

National Numbers of Academic Staff (FTE, excl Casuals)

Appendix - Emeritus Professor Alan Pettigrew, High level data on Australian university staffing trends, 2000-2021



Annual staff data snapshots 2000-2016 and Pivot table after 2017 (as at March each year) @ <https://www.dese.gov.au/resources/higher-education-statistics>

A decade of change in
student load and numbers
of academic staff

Students (EFTSL)					
Health	2011	% of total in 2011	2020	% of total in 2020	% change from 2011
Nursing	38,334	34.7%	64,921	37.1%	69.4%
Medical Studies	22,430	20.3%	28,950	16.5%	29.1%
Other Health	13,066	11.8%	23,367	13.3%	78.8%
Rehabilitation Therapies	11,043	10.0%	20,206	11.5%	83.0%
Public Health	10,877	9.8%	19,214	11.0%	76.6%
Pharmacy	4,101	3.7%	4,152	2.4%	1.2%
Veterinary Studies	3,067	2.8%	4,239	2.4%	38.2%
Dental Studies	3,043	2.8%	3,951	2.3%	29.8%
Radiography	2,070	1.9%	3,223	1.8%	55.7%
Complementary Therapies	1,963	1.8%	2,033	1.2%	3.6%
Optical Science	526	0.5%	795	0.5%	51.1%
Total	110,520		175,051		58.4%

Staff

Percentage Changes 2011 - 2020		Students (EFTSL)		Percent change student load	Percent change Academic FTE
Broad disciplines		2011	2020		
Society and Culture		221,274	252,687	14.2%	3.1%
Management and Commerce		178,372	217,290	21.8%	2.6%
Health		110,520	175,051	58.4%	17.2%
Natural and Physical Sciences		105,058	134,290	27.8%	4.2%
Creative Arts		68,521	85,974	25.5%	7.4%
Education		67,416	74,769	10.9%	-10.2%
Engineering and Related Technologies		56,815	81,407	43.3%	16.0%
Information Technology		38,941	84,192	116.2%	55.3%
Architecture and Building		19,300	25,870	34.0%	24.8%
Agriculture Environmental and Related Studies		11,204	14,111	25.9%	-9.3%
Total		877,421	1,145,641	30.6%	8.2%

% Change in Full-time and Fractional Full-time Academic FTE 2020-2021

The early impact of COVID

Teaching and Research

-5.8%

----- Overall -----

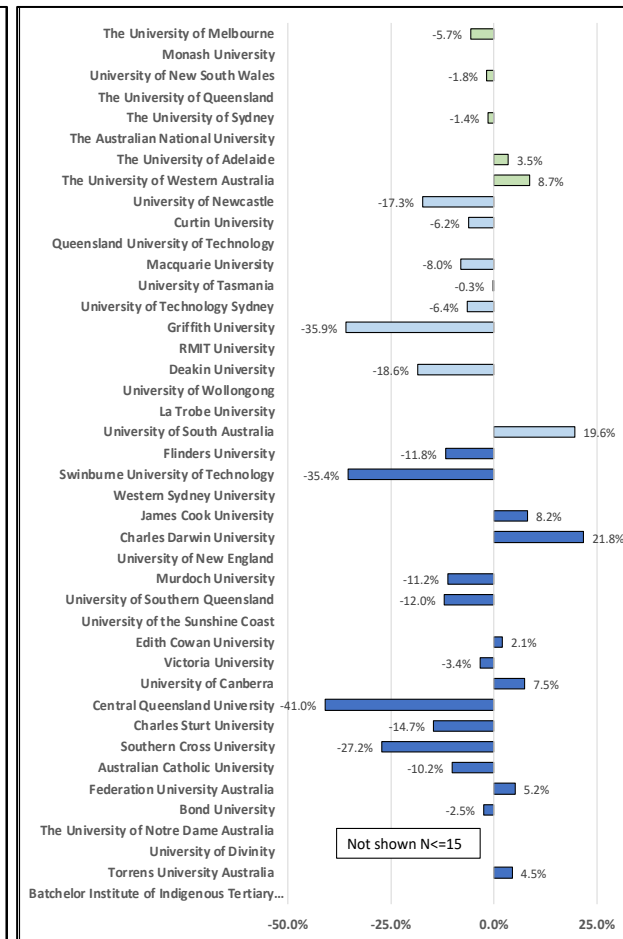
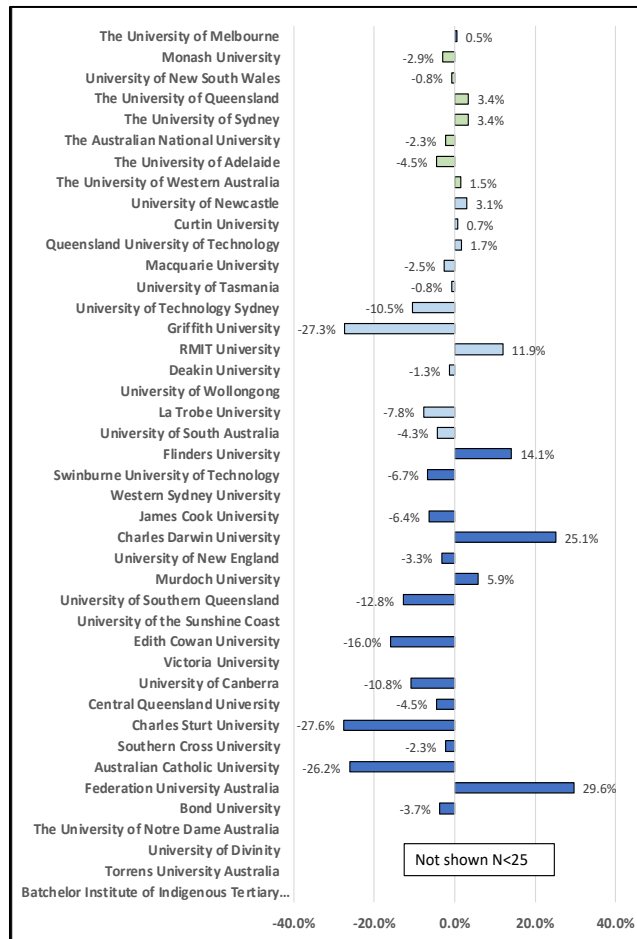
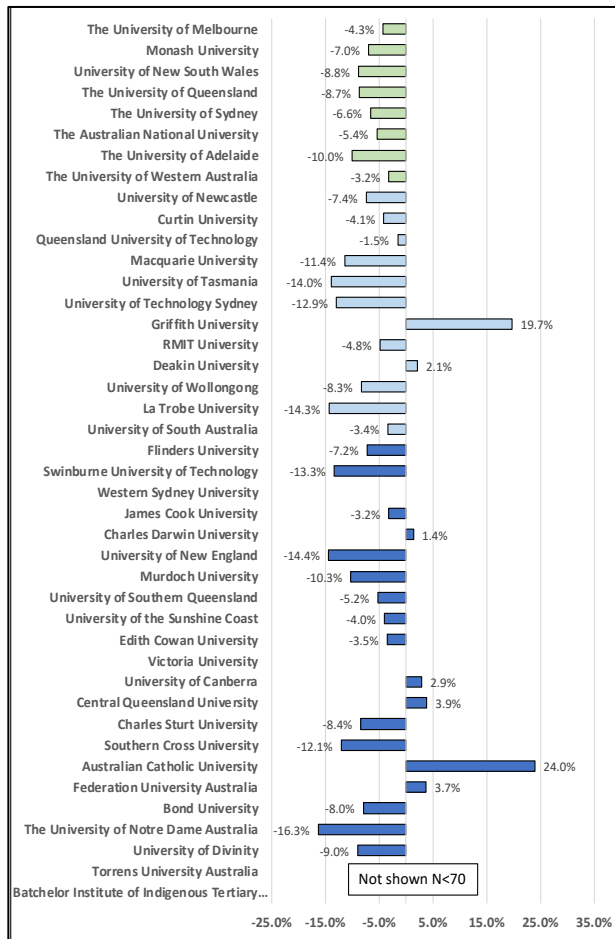
Research only

-1.6%

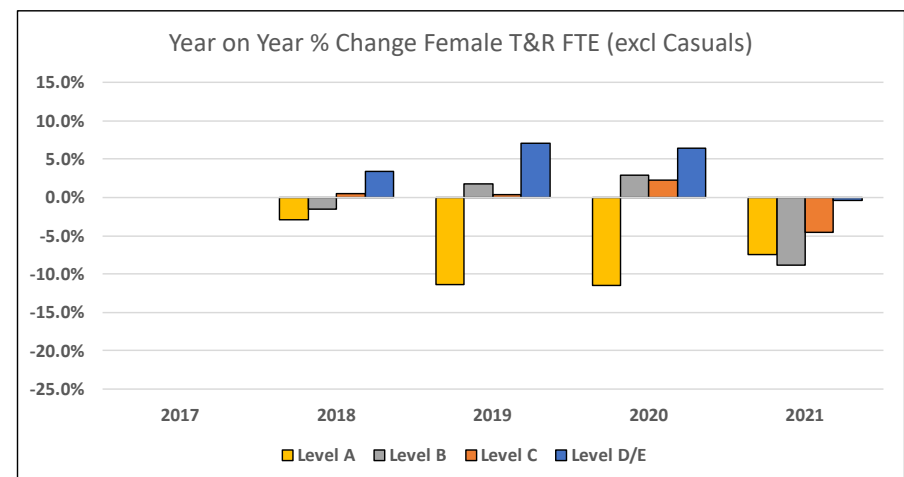
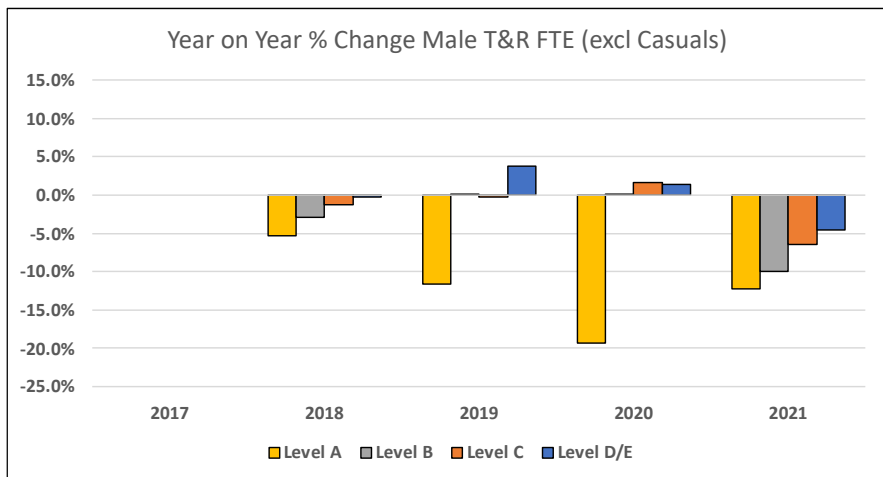
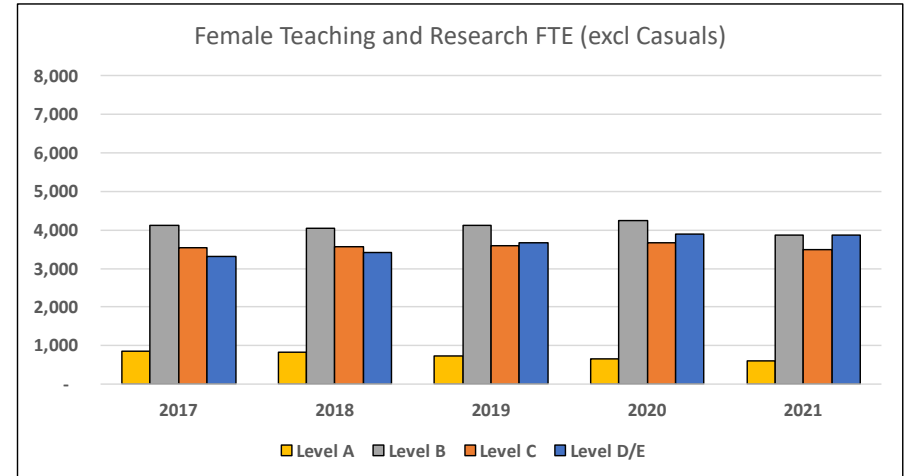
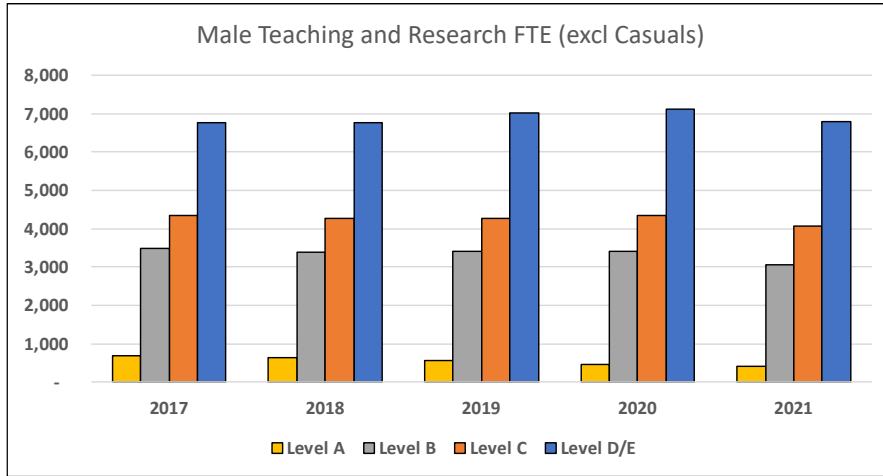
----- Overall -----

Teaching only

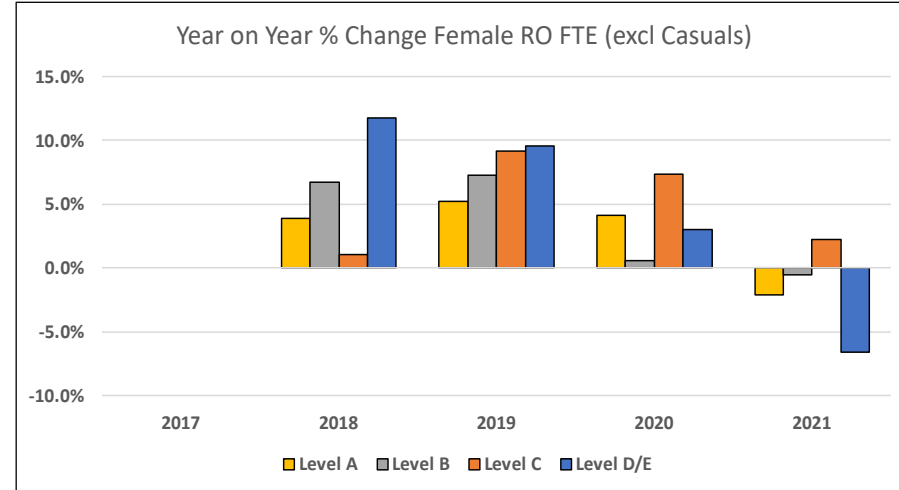
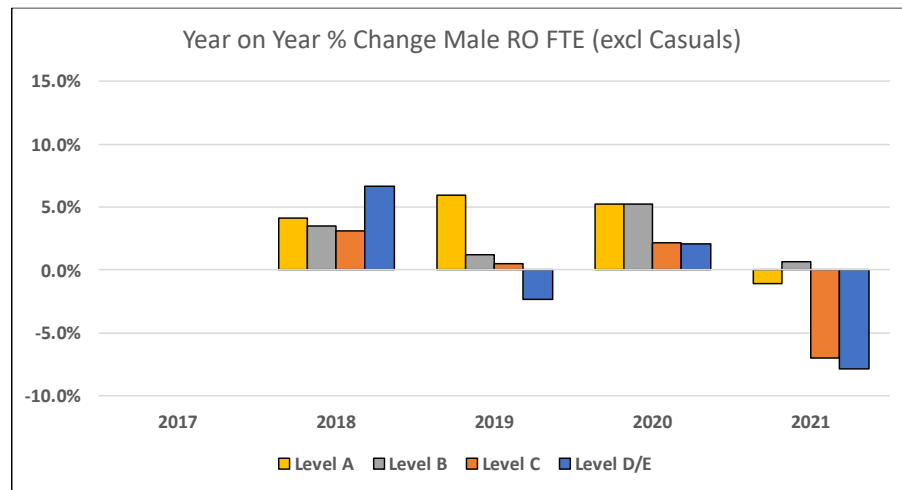
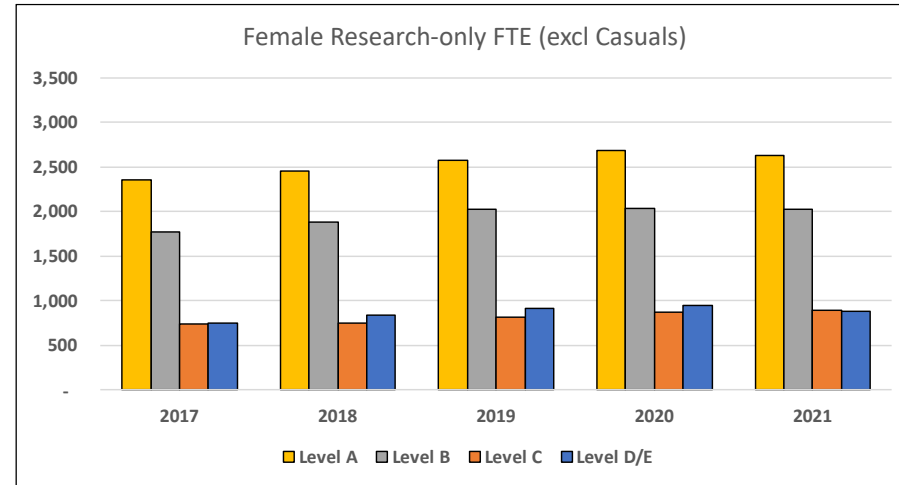
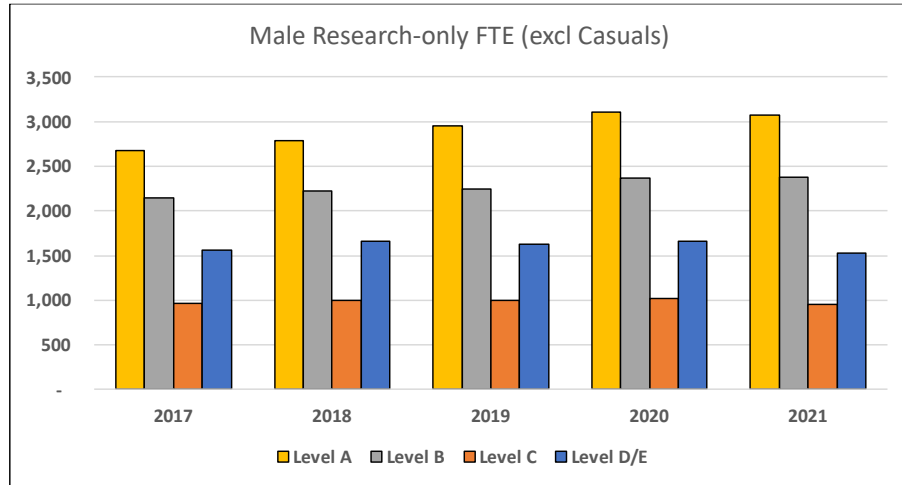
-7.5%



Teaching and Research Academic Staff FTE (excl casuals) by academic level – male and female

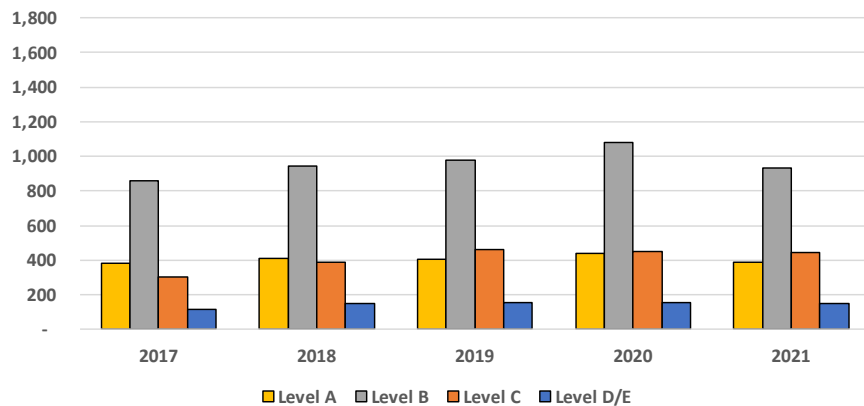


Research-only Academic Staff FTE (excl casuals)

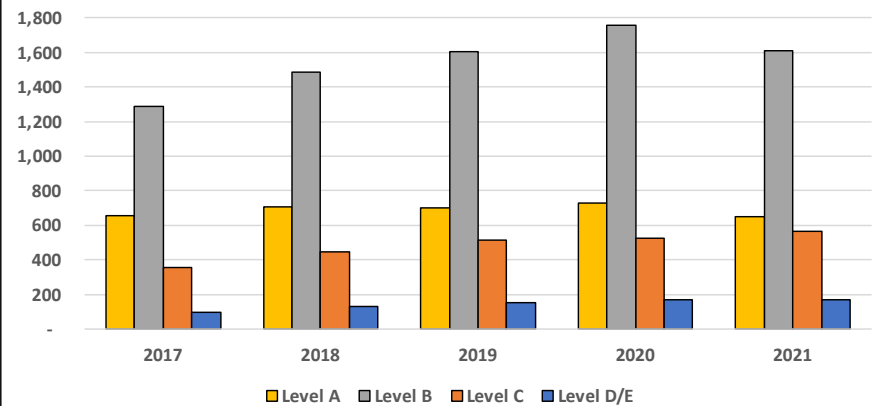


Teaching-only Academic Staff FTE (excl casuals)

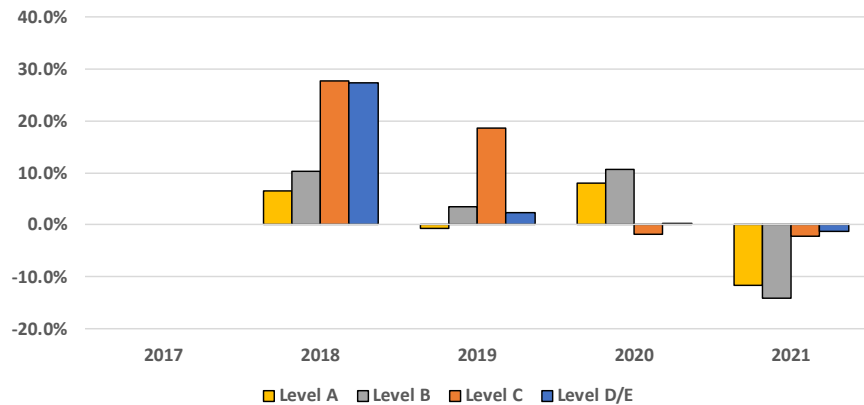
Male Teaching-only FTE (excl Casuals)



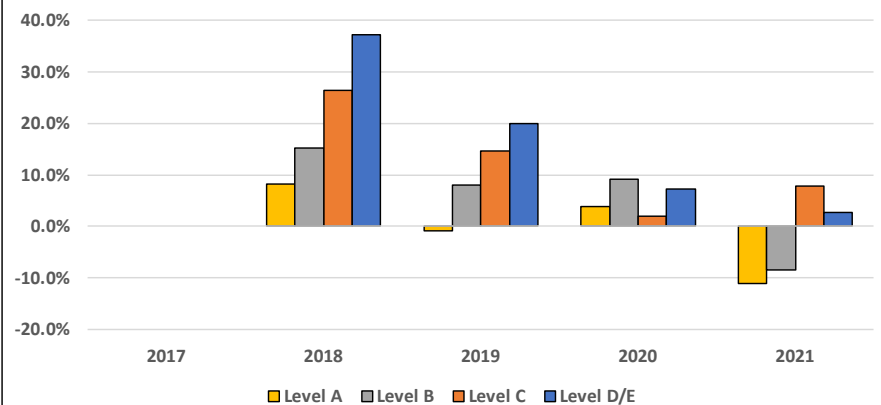
Female Teaching-only FTE (excl Casuals)



Year on Year % Change Male TO FTE (excl Casuals)



Year on Year % Change Female TO FTE (excl Casuals)



National Casual Academic Staff FTE

NOTE: Data for 2021 are not yet available.

