

11 April 2023

Professor Mary O’Kane AC
Chair, Australian Universities Accord Panel
Australian Department of Education
GPO Box 9880
Canberra ACT 2601

Dear Professor O’Kane,

Response to the Australian Universities Accord Discussion Paper

Thank you for the opportunity to provide a submission into the Accord process. I wish you the best of luck with this complex and critical task, which I hope, will set the higher education sector on a positive trajectory for decades.

As we recently discussed, ACOLA is supportive of the Accord process, believing it to be an excellent opportunity for Australia to set a new and improved ongoing relationship between the Government and the higher education sector for the future of teaching and research. However, we acknowledge that the success of an Accord mechanism, whatever form this takes, will require genuine buy-in and commitment, including willingness to compromise, from all parties.

I note that ACOLA’s members, Australia’s five Learned Academies, have developed submissions for your consideration. Given the volume of input the Panel will likely receive, we will not seek to summarise those submissions. Rather, we strongly encourage you to consider their important voices that rise above institutional or individual agendas to focus on a common good.

As the ACOLA Board discussed with the Panel, we attach an overview and analysis of the Californian public higher education system developed by ACOLA specifically for the Accord process, to provide a deep dive into another higher education system. As California has some of the best public universities in the world, it is useful to understand the differences between the Australian and Californian systems to help make informed decisions about the future of Australia’s higher education system and grow our global competitiveness. This is not to suggest the Californian system is perfect or should be duplicated in Australia, especially given the tuition and associated costs for some students.

While the US education system is commonly considered to be expensive, analysis of the California public system (provides some interesting considerations for your Panel, specifically:

- the availability of “aid” for low-income families results in around 55% of students at the paying no tuition fees
- the different structure of degrees and education between the two systems, which can impact student choice, reduce complexity and duplication and impact the cost of delivery
- the stratification and specialisation of universities, including the majority of public universities being primarily focussed on teaching, not research, and
- the geographic competition between universities in Australia compared to the US.

Given the size of Australia’s education exports and the increasingly competitive global education market, it is critical to understand how an alternate system / “competition” operates. Understanding how they work, the cost and ranks realised may help inform the focus and approach to an Accord to ensure our education system continues to be a major export.

In addition to the California analytical piece, below are several strategic issues we believe that the Accord process should have due attention to, drawing on recent work by ACOLA. We would be happy to provide further information on these to the Panel if useful.

Universities' role in enabling an inclusive society

Beyond delivering education and undertaking research, universities play an essential role in shaping the minds and practice of the professionals who deliver the services which are the backbone of Australian society. For example, our teachers, barristers, doctors and researchers. Policy directions and societal trends are increasingly orientated towards inclusivity, especially towards people with disability, Aboriginal and Torres Strait Islander and LGBTQI+ communities.

Our work for the Department of Social Services in 2022 explored the role that higher education can have in developing the skills of professionals to be more responsive to people with disability. This work, published as a national resource *Ensuring occupations are responsive to people with disability*, provides a framework as well as practical examples for how all levels of governments, universities, VET providers, professional bodies and frontline professionals can orientate their training efforts towards ensuring people with disability are included in education, and that future and current professions in justice, health, social care and education sectors understand and are responsive to their needs.

These were outlined in an 'action plan' attached to that report, which we strongly encourage the Panel to consider. Actions include:

- the ways courses are designed, approved and delivered by institutions
- the ways universities and VET providers train their teaching staff, and
- how the government monitors the activities of universities and VET providers.

A copy of the report and action plan can be found at: <https://acola.org/disability-confidence/>

Research data

The pandemic and recent natural disasters have highlighted the importance of rapid access to data to assist with timely decision-making and, subsequently the need for coordinated, integrated data infrastructure.

Data for research come from various sources: observations, images, sound, measurements, samples, computer programs and recordings. They can also be numerical, descriptive or visual and can be raw, cleaned, analysed or processed. Data also comes from a wider source, from more powerful and ubiquitous sensors (e.g., environmental sensors and wearable devices) to social media, which offers unprecedented observations of societal dynamics. With this, researchers will be able to explore topics never before accessible in ways that can benefit Australia and the world. However, with more data comes the complexity of managing it efficiently and effectively.

We note the work of the Research Data Culture Conversation, which ACOLA supports, in seeking to understand and improve the storage and management of research data to maximise value and improve cost sustainability across the system. Data is increasing significantly, and storage costs require a national conversation to ensure the funding sustainability of the university sector. The Accord process could provide an appropriate avenue for considering this strategic issue and asset.

Supporting student transitions and outcomes

We consider improving the support for vulnerable groups, such as Aboriginal and Torres Strait Islander people, from school into post-school education and careers a national priority that should be addressed. We note that universities have various programs and activities which focus on this. Still, more attention and investment are needed to break down barriers to participation amongst these communities and support the aspirations of everyone in our society, and the Accord process could facilitate and enable this.

We have seen promising and successful activities that work with students across their learning journey, from schools to universities/VET and career planning. Examples include:

- During our work with the NT Government, we have seen the work and impact of the Indigenous Girls' STEM Academy, funded by the National Indigenous Australians Agency and delivered by CSIRO. This work is very engaging and successful for participants, and could provide a good model for expansion and for adaption to children in other vulnerable populations.
- Services Australia's Aurora Neurodiversity program in targeted employment and training of neurodiverse students into ICT roles. In addition to having apparent success for employees and being strengths-based, this program assists managers in understanding and supporting the needs of neurodiverse students, and developing their skills, to increase the likelihood of successful employment.

Programs like these could be explored, enhanced and coordinated through the Accord mechanism rather than relying on institutional, discipline or faculty-specific activities alone.

Regional and remote education and research

We note the critical virtuous cycle between research activity and quality learning/teaching in universities. Based on our 2020 work for the Department of Education, *Research Excellence in Regional and Remote Universities*, it would be prudent for the Accord to consider the specific and unique needs in access to research infrastructure and research staff for undertaking research in regional and remote universities. This currently unpublished report provides a broad range of analysis and findings that would be relevant to the Panel process. With the agreement of the Department, we would be happy to provide you a briefing on this work or provide a copy of the report.

Finally, we hope that the Accord can support discussions that focus on the overall responsiveness of post-school education to the needs of the community and industry, delivered by both universities and VET providers. To have a responsive and skilled workforce, our post-school education system must operate effectively and in synchronicity. Where possible, student outcomes must be workforce-focused (but beyond STEM and focus on critical thinking skills), duplication between institutions needs to be reduced (especially those in close proximity), and access to education in regional and remote areas needs to be improved.

We wish you the best in the Accord process, especially in considering, analysing and balancing the various perspectives and desires for and from the higher education sector over the coming decades. If there is any way ACOLA and the academies can assist further, please do not hesitate to contact me.

Regards,



Ryan Winn

Chief Executive Officer

Lessons for Australia from the Californian University System

Developed by ACOLA for the University Accord process with the assistance of Professor Richard Holden FASSA and Daniel Thornton.

I. Executive Summary

This report provides a comprehensive comparison of the higher education systems in Australia and California. We present an in-depth overview of the public tertiary education system in California, including its institutional characteristics, student base, funding, and specialisation. We then compare California's public higher education system with Australia's, highlighting similarities and differences in key dimensions of interest. Our analysis reveals that both systems share many similarities, but also have distinct strengths and weaknesses. We suggest that Australia can learn from California's system to improve its own tertiary education system and include specific data points to support our analysis. We think this will serve as a valuable resource for the Australian Universities Accord process.

II. Overview of Tertiary Education System in California

i. Institutional Characteristics

In California, there are a broad range of higher education institutions including public universities, private universities, and community colleges. There are 33 public universities in California. These universities are divided into two systems, the University of California (UC) system and the California State University (CSU) system. The UC system comprises of 10 world-renowned universities throughout the state including, for example, UC Berkeley and UCLA. The CSU system has 23 universities.

The UC system predates the CSU system by almost a century. The CSU system was established in 1960 to create a new tier in California's public higher education system between community colleges and the UC system. CSU universities have a greater emphasis on teaching rather than research and are seen as a more affordable option for students. Only one university (San Diego State University) in the CSU system has high research activity while all 10 UC universities have high or very high research activity.¹

California also contains 150 non-profit private universities, and around 160 for-profit private universities. Despite such a large number of private universities, the vast majority (more than 80%) of students attend public institutions.² Among the non-profit private universities are the top universities in the state, namely Stanford University (Times Higher Education ranking = 3) the California Institute of Technology (Times Higher Education ranking = 6). Private universities are funded primarily from endowments, donations and grants, while public universities are primarily funded through state appropriations. We discuss this in more detail in section II. While we are primarily interested in public institutions, we provide data on the 8 most highly ranked private universities in California as a comparison group for the UC universities.³

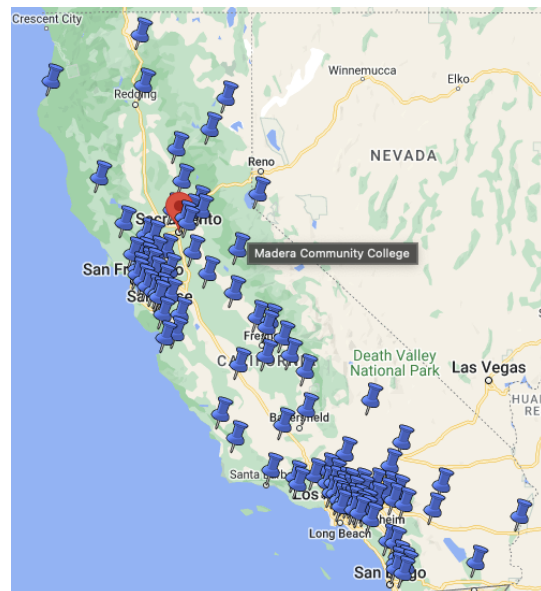
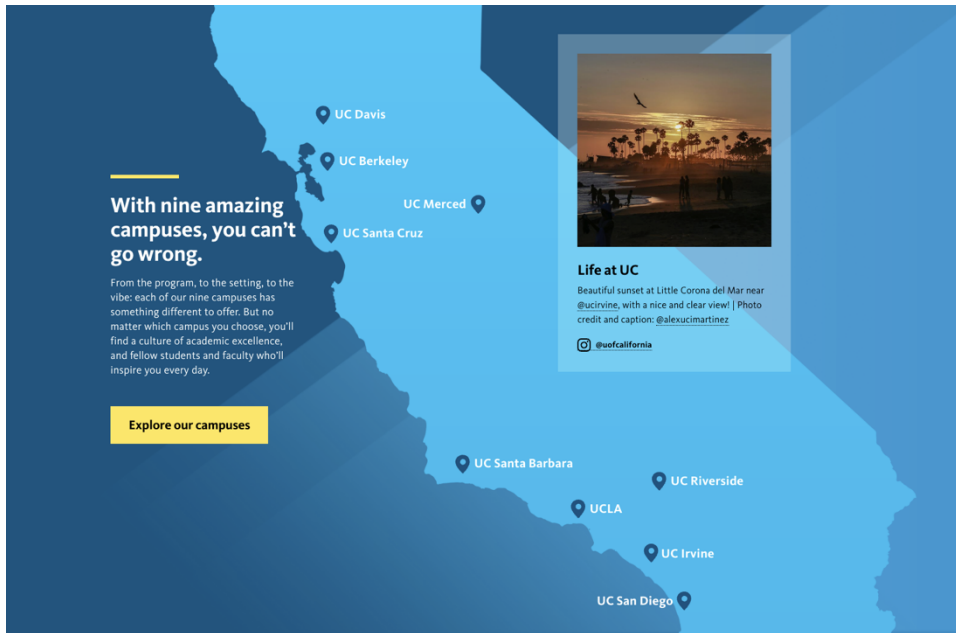
¹ As classified by the Carnegie Classification of Institutions of Higher Education.

² See "[Higher Education in California: California's Higher Education System](#)" for more detail.

³ These are (in no particular order): University of Southern California, University of San Francisco, University of San Diego, Stanford University, Pepperdine University, Claremont Graduate University, Chapman University, California Institute of Technology.

The California Community Colleges system is a vast network of community colleges that offer low-cost education to a diverse student population. It is the largest system of higher education in the U.S., with 116 colleges spread across 72 districts.⁴ California community colleges are a common pathway into university education, with 29% of UC graduates and 50% of CSU graduates starting at a California community college.

Both UC and CSU universities are located almost exclusively around population centres, while community colleges are in both urban and regional areas. See below for a map of the UC, CSU, and community college locations.



ii. Student Base

There were just over 2 million students enrolled in public tertiary institutions in California as of 2021. UC and CSU universities accounted for 789,000 of these students. Of the students enrolled at UC or CSU universities, 84% are undergraduates and 16% are graduate students. In terms of residency status, 90% of first-time undergraduates are from California, 6% are from other states within the US, and the remaining 4% are from other countries. Furthermore, 76% of undergraduate students across both systems receive some form of financial aid. In the following subsections, we

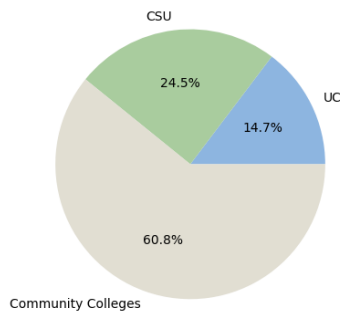
⁴ [California Community Colleges, Key Facts](#)

provide a detailed breakdown of these statistics for the public system – UC, CSU, and Community Colleges – and a selected set of 8 top private universities.

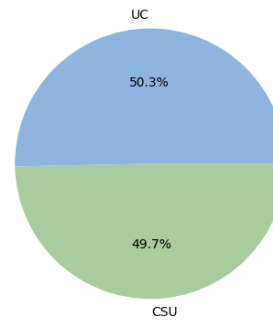
a. Enrolment Numbers

UC universities⁵ make up only 15% of the enrolments (296,000 total) but have a larger number of students on average compared to the CSU universities. Both have a comparable number of graduate enrolments (65,000 at UC and 64,400 at CSU), so the differences in enrolment are driven primarily by undergraduate students. Community colleges do not offer any graduate programs, however, 15 out of 116 community colleges offer a 4-year Bachelors degrees.

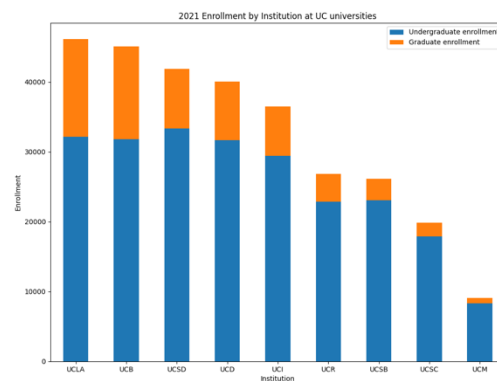
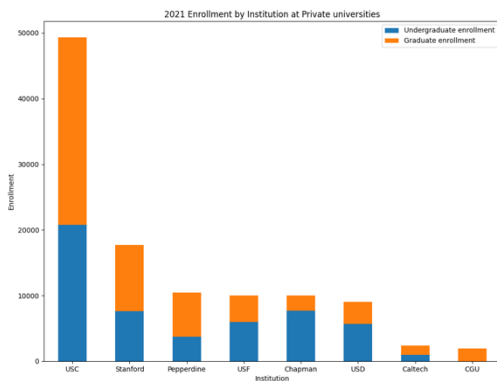
Enrollment Distribution in Public Tertiary Institutions in California



Graduate Enrollment Distribution



The combined enrolment of the top 8 private universities is 111,000– a bit over 1/3rd of the size of the UC system. But almost half of these enrolments are at the University of Southern California– every other top private university has less students than almost all UC universities.



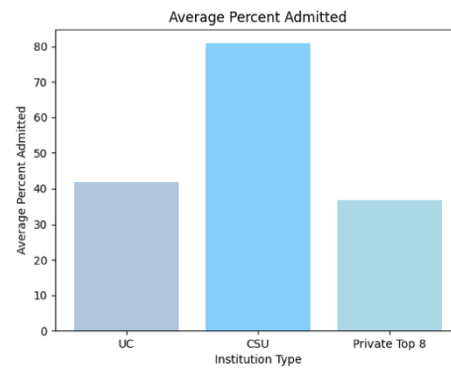
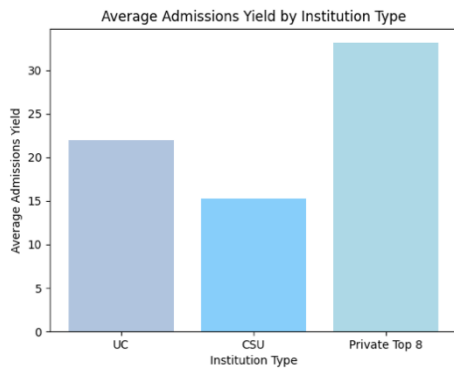
b. Selectivity:

Top private universities are more selective than UC universities, with an average admissions yield of 33% compared to 22%. This means that one-third of students who are accepted to a top private university accept that offer, while only 22% accept offers from UC universities. CSU has a lower admissions yield and accepts the vast majority (81%) of applicants. There is a clear hierarchy of selectivity. The same pattern also bears out in SAT scores.⁶ Community Colleges have an open enrolment policy, meaning that they are not selective at all– they will accept any student who has completed high school or passed the General Education Development (GED) test.⁷

⁵UC San Francisco (UCSF) is excluded from our statistics unless we explicitly say otherwise. Unlike other UC universities, UCSF is exclusively a graduate medical school.

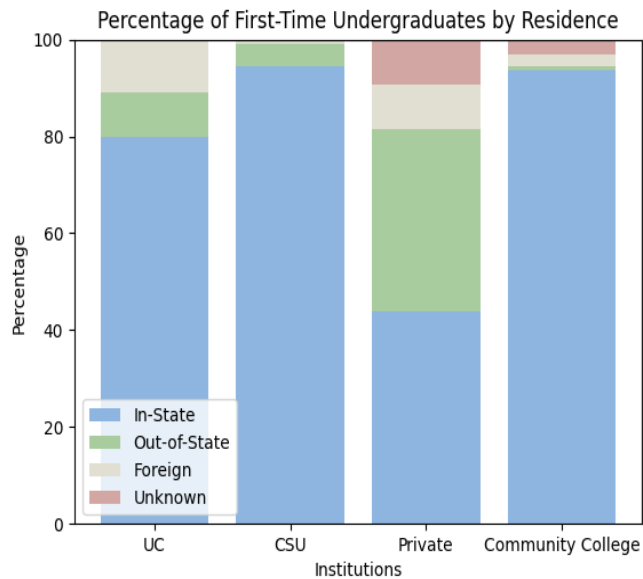
⁶ See Data Appendix.

⁷ Source: [Open Admissions Colleges in California.](#)



c. Demographics (Geographics):

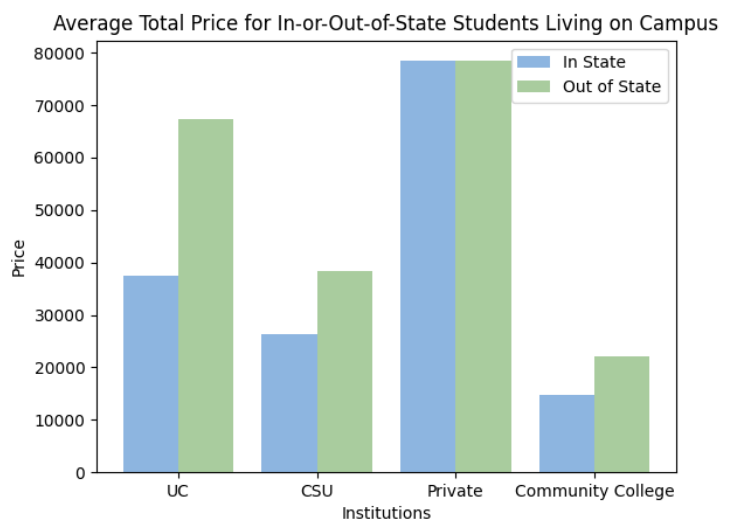
The geographic make-up of students at different types of institutions varies greatly. All public institutions have a high percentage of in-state students, with CSU universities having the highest average number at 95%. Our selection of private universities has a much larger percentage of out-of-state students (38%) than any other type of institution, followed by UC universities at 9.2%. Notably all institutions had a relatively low percentage of foreign students— 9% at private universities and 11% at UC universities. It is worth noting that UC universities have had a growing number of international students over the last 15 years which began from the need to make up for state funding shortfalls resulting from the Global Financial Crisis. In 2020-21, non-resident tuition came to account for about a quarter of the core funding for UC.⁸ We will discuss funding in more detail in section iii.



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d. Financial Aid:

Attending a university in California can be expensive, especially at a UC university or a private university. One of the reasons for this is that many students choose to live on campus, which means they pay for room and board in addition to tuition. For example, almost 50% of the students at UCLA live on-campus.⁹ In the graph adjacent to this text we report the average price for in-state and out-of-state students living on campus— note that there is no difference in pricing for private institutions. The price includes in-state tuition and fees, books and supplies, on campus room and board, and other on campus expenses. Every student at a UC university (domestic or international) is also automatically enrolled in the



⁸ See the Public Policy Institute of California’s report: [What are the Consequences of Limiting Nonresident Students at UC?](#) for more detail.

⁹ Source: US News Education [UCLA Profile](#).

UC student healthcare plan “UC SHIP”, which not only covers students but also their partners and any dependents.¹⁰

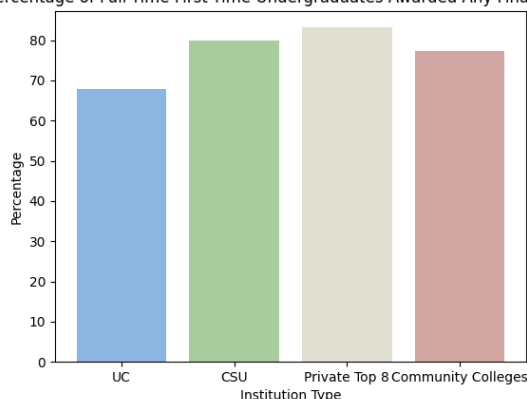
Unlike in Australia, there is no HECS-HELP style loan system. Students attending a university in California are responsible for paying their tuition fees upfront, through financial aid, or through student loans. Aid plays an especially large role for students of lower-income families. For example, UC boasts that any applicant with family income less than \$80,000 pay zero tuition. The result is that 55% of graduates pay no tuition. In addition, 70% receive grants and scholarships, and 45% graduate with no student loan debt.¹¹ Student loans are not uncommon, though far less prevalent than financial aid. At UC or CSU universities around 20% of students receive student loans. This number is around 12% higher at top private institutions, and less than 1% at community colleges.

The average net price of university for students who are awarded grant or scholarship aid is 50% higher at UC than at CSU (\$15,000 vs. \$10,000), and around \$33,000 at top private institutions. This is substantially lower than the in-state average total price.

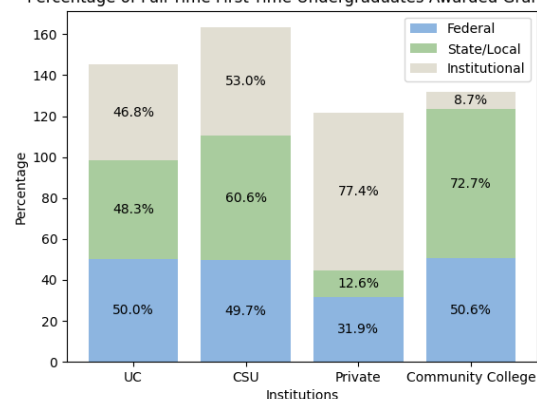
In addition to the above, all UC universities along with a few CSU universities practice "needs-blind" admissions for students within California. This means that a student's financial situation is not considered as a factor in their admission decision. However, it is important to note that this is only applicable for in-state students. Stanford and Caltech (part of the 8 private universities we consider) also practice needs-blind admissions, but for any student in the country. This is important from the educational supply side since it implies that top institutions do not filter out low-income students based on potential aid status (though lower institutions may well do so). However, to our knowledge there is no institution in California practicing needs-blind admission for international students. This is because international students are increasingly becoming a more important source of revenue.

While the percentage of students receiving aid does not differ drastically across institutions, the source of aid at top private universities is more likely to be institutional than at public universities, where aid is usually provided by the government. The graph on the right below shows the percentage of full-time undergraduate students awarded aid from difference sources at different types of institutions. Note that students can receive aid from multiple sources and so the bars do not add up to 100%. Government aid (Federal and State/Local) make up most of the financial aid at public institutions, while institutional funding is more common at private universities.

Percentage of Full-Time First-Time Undergraduates Awarded Any Financial Ai



Percentage of Full-Time First-Time Undergraduates Awarded Grant Aid



iii. Funding

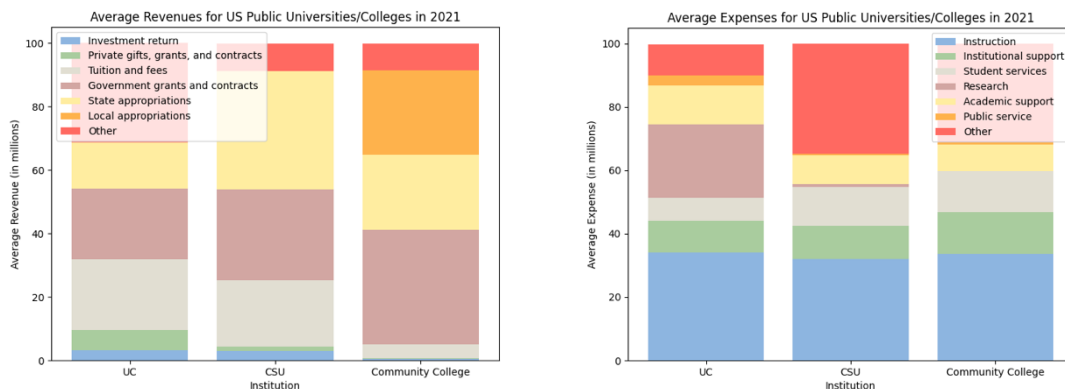
a. Public Funding

For UC, CSU, and Community Colleges, tuition and fees, government grants and contracts, and state appropriations are the largest sources of core revenues. “Other” revenue includes federal appropriations,

¹⁰ See the [UC SHIP website](#) for more details.

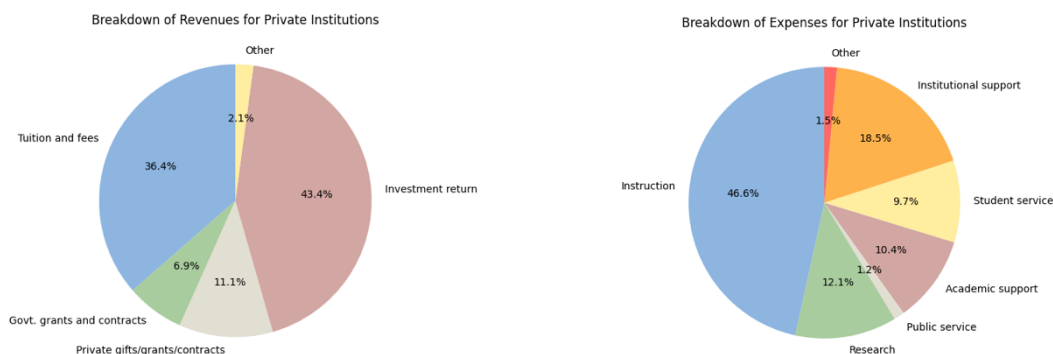
¹¹ [University of California Admission, 2022.](#)

which are around 5-10% (though sometimes more or less) depending on the university. Community colleges also rely in large part on local appropriations, while public universities do not receive any local appropriations. The largest expenses vary depending on the institution. Instructional expenses and institutional support expenses account for a comparable amount across all institutions (around 45%), but only UC institutions have a significant portion of expenses allocated to research (23%). This is because, as we have said already, UC universities are the research-intensive public universities in California.



b. Private funding

Compared to public institutions, top private universities receive most of their funding (43%) from investment returns. They also rely more heavily on tuition and fees (36% compared with 22% for UC). The highest cost for top private institutions is instructional expenses, which make up nearly half of total core expenses (47%), while research expenses make up only 12% of total core expenses (though research expenses are substantially higher at Stanford, 22% and Caltech, 42%). Comparing this with UC universities shows us that top private institutions place a greater emphasis on instructional expenses than any public institution – these institutions can only remain highly demanded by having strong instructional programs which attract students.

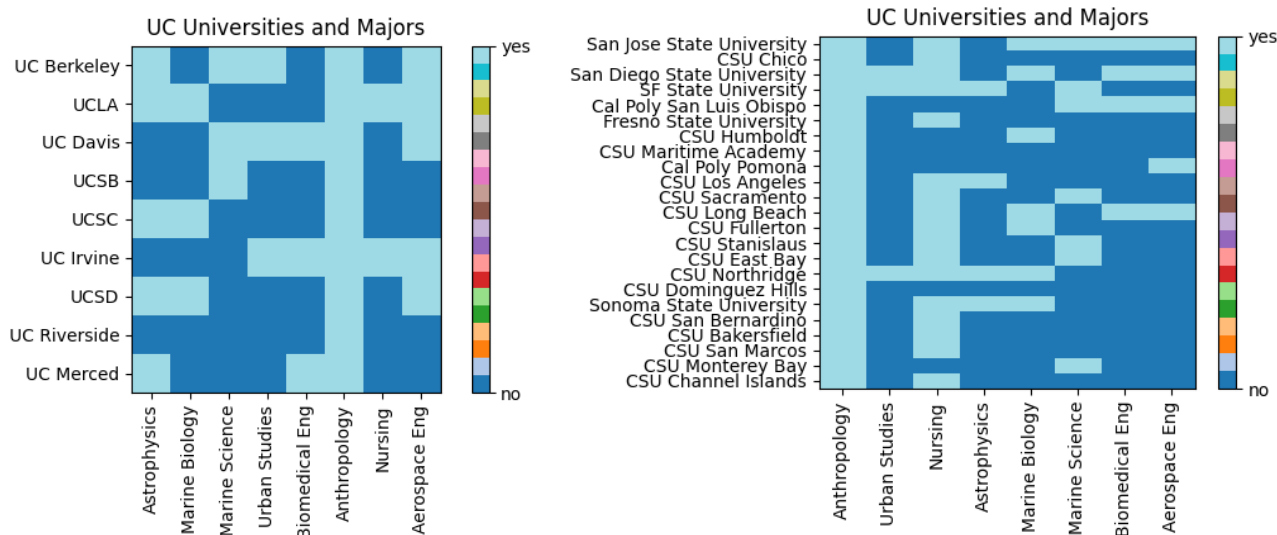


iv. Specialisation

a. Snapshot of Degrees/Majors offered

In the US, every public university offers a Bachelor of Arts (BA) and a Bachelor of Science (BS). Moreover, almost all students completing a Bachelors degree complete either a BA or a BS. There are exceptions– for example CSU Sacramento (or “Sac State”) offers a Bachelor of Music (BM), and CSU Los Angeles offers a Bachelor of Science in Nursing (BSN). Exceptions are rarer among UC universities, though UCLA offers a BM as of 2019. Most public universities do not have these additional Bachelors degrees. A student wanting to study nursing would usually complete a BS with a major in nursing. A student wanting to study music would usually complete a BA with a major in music. This is very different to the Australian system; we compare the two systems in detail in section III.

We now take a closer look at the majors offered at UC and CSU universities. We consider 8 majors across arts and sciences which were chosen deliberately to demonstrate the differences between the institutions. The colourmaps below show the majors offered by each university. The fact that the rows are not all identical tells us that there is some specialisation.



First, we look at UC universities. Not all UC universities offer the same majors, and there are some patterns that emerge from the data. For example, UC Davis, UC Irvine, and UC Merced are the only UC universities that offer a major in Biomedical Engineering, while UCLA, UCSC and UCSB are the only UC universities that offer a major in Marine Biology. Additionally, UC Davis, UC Santa Barbara, and UC Merced are the only ones to offer Marine Science. There are of course some commonalities, for example Anthropology is offered at all UC universities.

CSU universities also differ in the majors they offer, for example there are only five schools offering either a biomedical or aerospace engineering program (and 4 out of these 5 offer both). Moreover, none of the engineering universities offer an Astrophysics major– this major is only offered by 4 universities with strong physics departments.

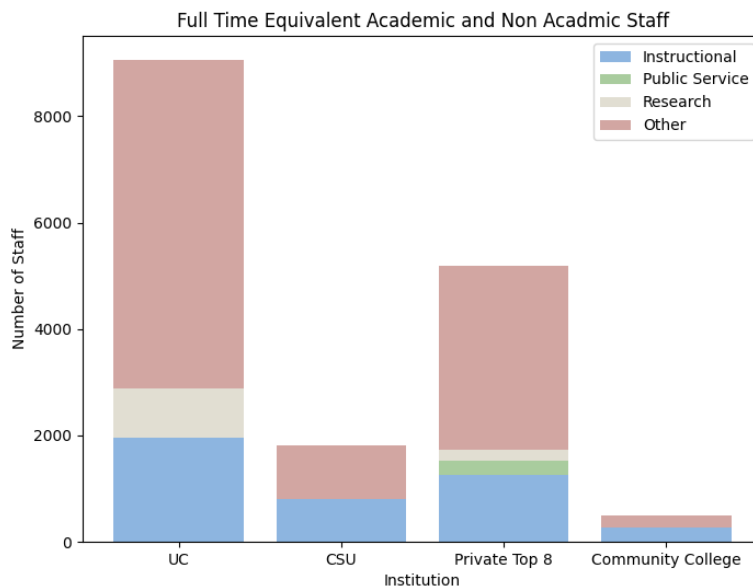
Comparing UC and CSU universities, there are some notable differences. Almost 75% of CSU universities offer a major in Nursing, while this is true of only 22% of UC universities. Aerospace engineering is far less common in CSU universities (22%) than in UC universities (56%), as is Urban Studies (13% vs. 33%). When we compare California with Australia we will see that with respect to taking an education major, CSU universities offer a broad range of options while UC universities are much more specialised.

b. Undergraduate and Postgraduate Schools

In the US it is uncommon to study business or law at the undergraduate level. Individuals who are interested in pursuing a career in business (e.g. Finance) or Law first complete a BA or BS, and then go on to complete graduate studies. 5 out of 9 UC universities have a graduate law school, and 6 have an MBA. In contrast, no CSU universities have a graduate law school, but almost all of them (21 out of 23) have an MBA program.

c. Teaching Staff

Staff at any university is primarily made up of non-academic staff such as administrative or student support staff. The graph below shows the number of full time equivalent staff at UC, CSU, top Private institutions and Community Colleges. UC has the largest number of instructional, research, and non-academic staff of any type of institution. This is perhaps surprising considering that private universities have a much larger instructional expense, which implies that UC universities are paying their instructional staff less on average than private universities (assuming the total expenses at both sets of institutions are comparable). Notice also that CSU does not have any research staff. This is reflective of their position in the California system.



III. Comparison of Tertiary Education Systems in California and Australia

Australia and California share some similarities in terms of their geography, demographics, economy and education. Both are located on the Pacific coast and have diverse landscapes, climates and natural resources. Both have large and multicultural populations that are concentrated in urban areas. Both have developed and prosperous economies that rely on various sectors such as technology, agriculture, tourism and entertainment. Both have high standards of living and education, with a significant and comparable proportion of their population holding a Bachelors degree or higher.

However, there are also some notable differences between Australia and California that affect their university systems. Most obviously, Australia is a sovereign country, while California is a state within the United States of America. Australia has a unified and regulated higher education sector that is mostly funded by the federal government, while California has a diverse and competitive higher education sector that is funded by various sources (largely depending on the sector) such as the state government, private donors and tuition fees. Australia has a population of 26.4 million people living in an area of almost 7.7 million square kilometres, while California has a population of 39.1 million people living in an area of 434,000 million square kilometres. As such, Australia has a much lower population density and a more dispersed distribution of its population than California. As a result, Australia’s educational institutions are more geographically dispersed than those in California.

These similarities and differences between Australia and California have implications for their university systems in terms of their structure, quality, accessibility and affordability. In this section, we will compare the Australian university system with the Californian university system in terms of their institutional characteristics, student base, funding, and specialisation.

i. Institutional Characteristics

Much like California, Australia has a broad range of higher education institutions including public universities, private universities, along with colleges and university colleges. “Higher education institution” has a specific meaning in Australia and refers only to those institutions offering a Bachelors degree or higher. Post-secondary education which is lower than the Bachelors level falls under the category of Vocational Education and Training (VET), as offered by most Technical and Vocational Education and Training (TAFE) institutions, but many universities now offer some sub-Bachelor qualifications.¹² Australia has 38 public universities compared with California’s 33, and Australia’s highest research-intensive universities, the Go8, are the closest comparison group for the UC universities with regards to their research output and prestige. Notwithstanding challenges and criticisms of university ranking systems, it is worth noting that the Go8 universities are ranked well below the top UC universities. The table below shows the 2023 Times Higher Education rankings for UC and Go8 universities in order of highest to lowers.

¹² See TEQSA for more detail.

UC University and Rank	Go8 University and Rank
UC Berkeley = 8	University of Melbourne = 34
UC Los Angeles = 21	Monash University = 44
UC San Diego = 32	The University of Queensland = 53
UC Davis = 63	The University of Sydney = 54
UC Santa Barbara = 64	Australian National University = 62
UC Irvine = 95	UNSW Sydney = 71
UC Santa Cruz = 192	University of Adelaide = 88
UC Riverside = 251-300	University of Western Australia =131
UC Merced = 301-350	

Insofar as the public education system goes, one strength of Australia’s current system is that despite not having as high rankings as the top UC universities, the variance in the rankings at GO8 universities is substantially lower than at UC universities. Of course, if we were to add private universities (e.g. if we were to include Stanford, Caltech) into the table, California’s rankings would dominate the GO8. Whether or not universities put any weight on these rankings, they matter inasmuch as prospective students think they do.

Australia’s public universities have been established at different times, and so while they are unified under the same federal guidelines and regulations, there is no sense in which a group of Australian universities fall under the same banner in the way that “UC” or “CSU” universities do. The Go8 for example is just a group of eight independent universities. Australia’s other public universities are members of other university groupings, i.e. the Australian Technology Network, Innovative Research Universities and Regional Universities Network.¹³ The 29 universities in these groups are really the only sensible comparison group for CSU universities, but as we will see the two are different across several important dimensions.

Australia has a much smaller private university education sector than California, with only six private universities.¹⁴ California has over 200 private universities. As of 2021, Australia had 95 non-university higher education institutions, and most (but not all) of these are private. In California there are hundreds of other private 4-year institutions.

There are around 5,000 “Registered Training Organisations” (RTOs) in Australia¹⁵, and these organisations offer VET level qualifications. Most TAFE institutions are RTOs, but as with community colleges in California, there are some exceptions to the rule— for example, TAFE NSW offers a selection of Bachelors degrees and is therefore classified as a non-university higher education institution. The majority of TAFE (and other RTO) graduates receive a Certificate II, III, IV, or Diploma. Of those enrolled in RTOs, 72% (around 3.2 million students) were enrolled in private institutions as of 2021¹⁶. Unlike California, Australia’s private education system is thriving not at the university level, but at the VET level.

ii. Student Base

a. Enrolment Numbers

According to the ABS, there were around 2.07 million people aged 15-74 who were engaged in study in 2022.¹⁷ TAFE accounts for around 22% of these students while 17% attend other (non-TAFE) education or training institutions and the remaining 61% attend universities. Of those at university, less than 3% are at private institutions meaning that more than 97% of students who attend a university are at public universities. The combined enrolment across all private universities in Australia is lower than the enrolment at (for example) the University of New South Wales or Monash University .

¹³ Department of Education, [Undergraduate applications, offers and acceptances 2021](#).

¹⁴ These are, University of Notre Dame Australia, University of Divinity, Torrens University Australia, Avondale University, Bond University, and Carnegie Mellon Australia. However, Carnegie Mellon Australia announced in 2022 that they would begin winding down operations.

¹⁵ Source: [Training.com.au](#)

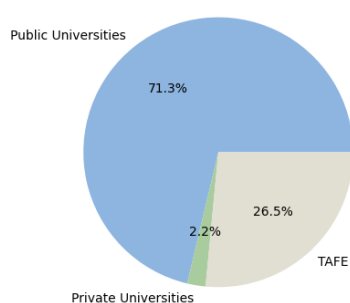
¹⁶ NCVET Databuilder: [Total VET students and courses](#)

¹⁷ ABS, [Education and Work](#), 2022

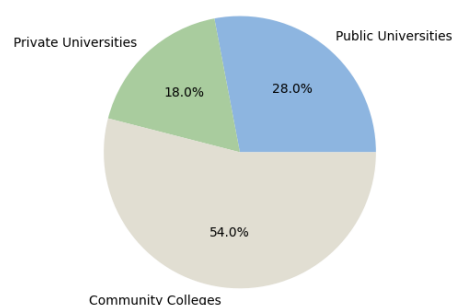
Around 22% of student with VET qualifications go on to study at a higher level.¹⁸ This is a much lower percentage than the percentage of students who go on to a CSU or UC institution after completing community college in California. Moreover, not all of these students go on to study at the Bachelors level (or higher), though some do. For example, a student may get their Enrolled Nurse credential at an RTO (such as a TAFE) and continue to university to get their Registered Nurse credential by completing a Bachelor of Nursing. VET qualifications are usually designed to get people out into the workforce immediately after (and even during) their being credentialed– indeed, 77% of those who complete a VET qualification are employed after their training.

In California on the other hand, 54% of students are at community colleges alone, and another 18% are at private universities. The California system relies much more heavily on both non-university higher education institutions and private institutions. Notice also that despite having a smaller population, Australia has a larger number of students enrolled in higher education than California, and this is especially true for the number of students enrolled in public universities. The graphs below summarise this data.

Enrollment Distribution in Public Tertiary Institutions in Australia



Enrollment Distribution in Public Tertiary Institutions in California



b. Selectivity:

Unfortunately, there is not a measure comparable to the admissions yield for measuring the selectivity of institutions in Australia.¹⁹ The best measure we have is the ATAR cut-offs at different universities. We report below the 2022-23 ATAR cut-offs for a BA, BS at universities which made offers through the University Admission Centre (UAC).²⁰

University Name	BA Cutoff	BS Cutoff
Australian Catholic University	58.50	N/A
Charles Darwin University	60.00	60.00
Charles Sturt University	55.00	65.00
CQ University	N/A	69.00
Griffith University	65.00	67.00
La Trobe University	60.00	55.00
Macquarie University	75.00	75.00
Southern Cross University	N/A	84.10
University of Canberra	60.00	60.00
University of New England	67.55	67.55
University of Newcastle	62.00	65.00
University of Sydney	80.00	80.00

¹⁸ NCVER [Databuilder](#).

¹⁹ At least, not any publicly available measure that we are aware of. It would be useful for institutions to make this data available as a more internationally recognised measure of selectivity.

²⁰ Source: [UAC](#). We use the January Round 1 cutoff whenever possible, and the December Round 2 cutoff if it is available and the January cutoff is not. If an institution offers a Bachelor of Business and not a Bachelor of Commerce we report the cutoff for the B Bus in the BCom column instead. Finally, if the institution offers only specialised degrees– for example a “BA (Design)” and a “BA (Music)” but no pure “BA”, then we report the average over all listed degrees.

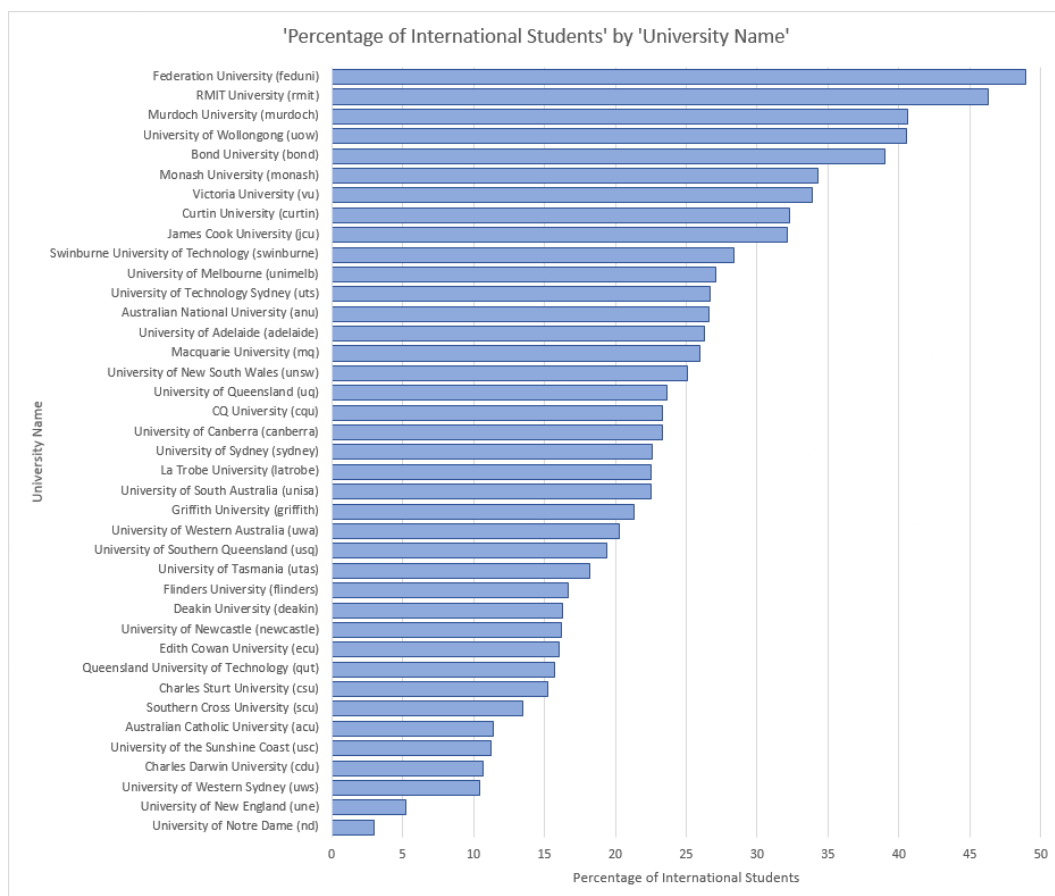
University of Technology Sydney	N/A	75.60
University of Wollongong	70.00	70.00
UNSW Sydney	80.00	80.00
Western Sydney University	60.00	65.00

We see that Go8 institutions such as UNSW Sydney and University of Sydney have a higher cutoff than other universities and are therefore more selective about which domestic students they admit. It is worth noting here that the UC system is “test free”, meaning that their admission decisions are not based on standardised admission tests such as the ACT and SAT. This decision was made in 2021, and more than 76% of all U.S. bachelor-degree granting institutions now practice test-optional or test-blind admissions.²¹

c. Demographics

Australian universities have a large number of overseas students when compared to universities in California. The table below shows the percentage of international students at (almost) every Australian university.²² The average number of international enrolments is 20.3%. Among Go8 universities it is almost 26%. This is much higher than the proportion of international students at UC universities (9%), top private universities (11%), and CSU universities (1%).

A large share of Australia’s international students come from China (30% as of 2021), and India (17.5%).²³ International students pay higher fees than domestic students (as is the case in California), so it is essential to understand funding for Australian universities in order to understand why Australian universities are so inclined to attract international students.



iii. Funding

Australian universities receive a significant portion of their revenue (52%) from Australian Government financial assistance, with 42% of this assistance coming from Commonwealth Grant Subsidies (CGS) or other

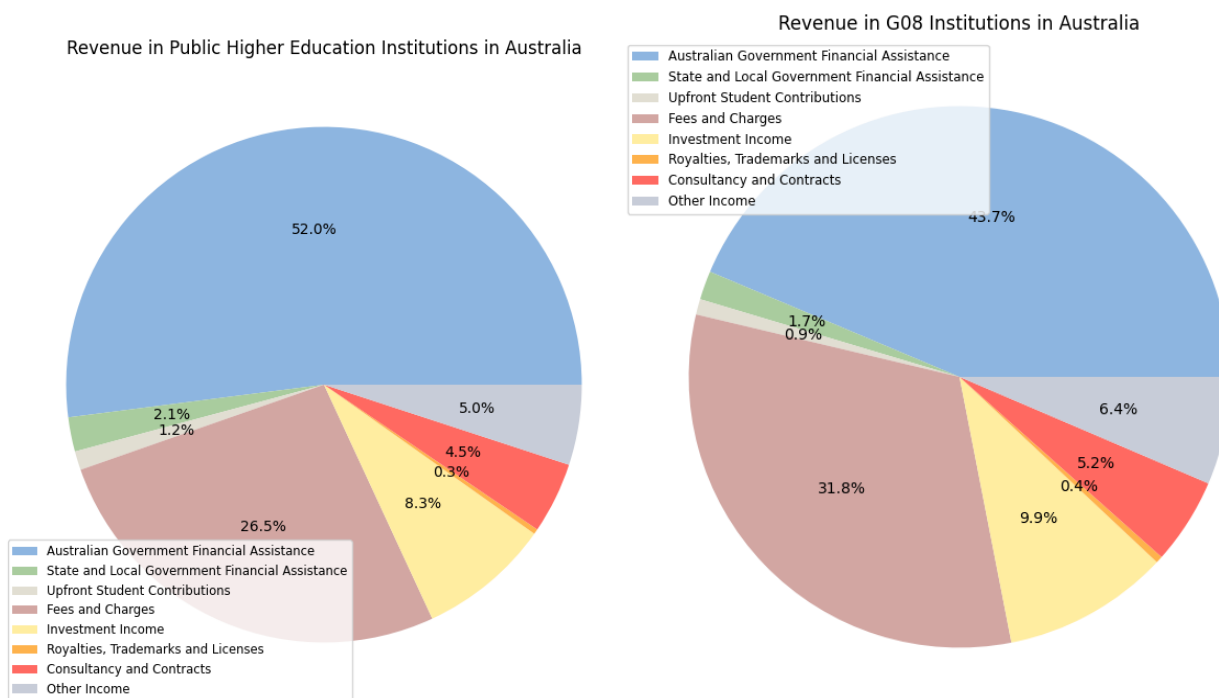
²¹ Source: Forbes, [University of California Reaches Final Decision: No More Standardized Admission Testing](#), 2021.

²² Source: University Rankings, [International Student University Enrolment Numbers](#)

²³ Source: Department of Education, [International Education](#).

grants, and 30% from HECS-HELP and FEE-HELP.²⁴ Fees and charges contribute 27% of the revenue, with 85% of this amount coming from fee-paying overseas students. Go8 universities have a higher proportion of their revenue coming from international students, with 89% of their fee revenue from overseas students. Investment revenue accounts for 8% of the revenue, which is substantially higher than the investment revenue for public universities in California. International student revenue still accounts for 23% more revenue than the combined revenue from the CGS along with HECS-HELP, FEE-HELP and SA-HELP, all of which help fund domestic students.

In contrast, at UC universities, only 37% of the revenue comes from government grants or state appropriations, with 22% coming from fees and 31% coming from "other revenues", 5-10% of which is from federal appropriations. While Go8 universities get more revenue from the government than UC universities, this difference is only a few percentage points. UC universities generate approximately the same amount of income as the entire Australian university sector (\$41.6 billion in 2020-21 compared with \$39 billion for all Australian universities).²⁵ Similarly, CSU universities get around 61% of their revenue from state appropriations and government grants and contracts alone, which is comparable to non-Go8 Australian universities that receive approximately 59% of their revenue in Government Financial Assistance. The University of California has faced large budget cuts in recent years, and in response has raised tuition substantially. Still, it appears the demand for education at these institutions has not declined, indicating that demand for top quality education is fairly inelastic.²⁶



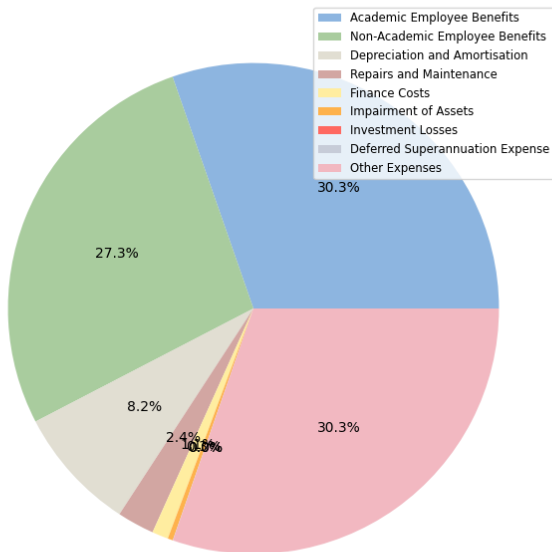
Moving on to expenses, the total expenses across all Australian universities were \$33.5 billion (as of 2021). Employee benefits and on-costs account for almost 60% of this expense, which is split roughly half-half between academic and non-academic employees (with academic employees receiving a slightly higher share). The expense profile for Go8 universities is almost identical to the rest of the university system, with a minor reduction in employee costs and an increase in "other expenses". While we don't have data on research staff expenses for Australian universities, we do know that Go8 universities receive over 67% of the available government-funded research income.

²⁴ Department of Education: [Higher Education Providers Finance Tables, 2021](#).

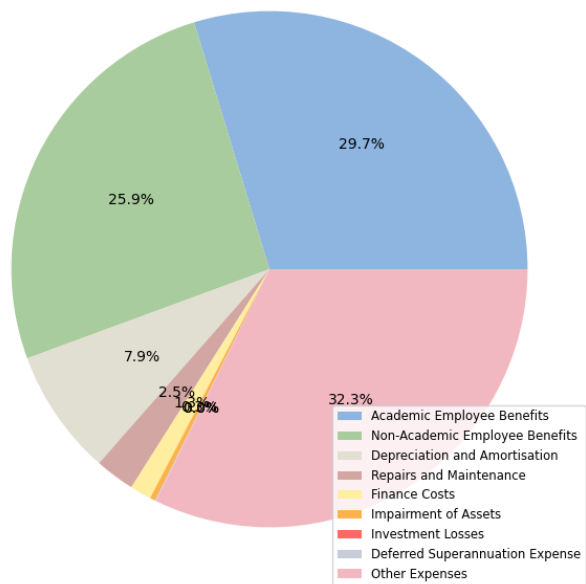
²⁵ Source: [UC Budget 2021-22](#), it is also worth noting that UC projects revenues of \$43.9b in 2022-23.

²⁶ See the Public Policy Institute of California report: [Higher Education Funding in California](#) for more detail.

Expenses in Public Higher Education Institutions in Australia



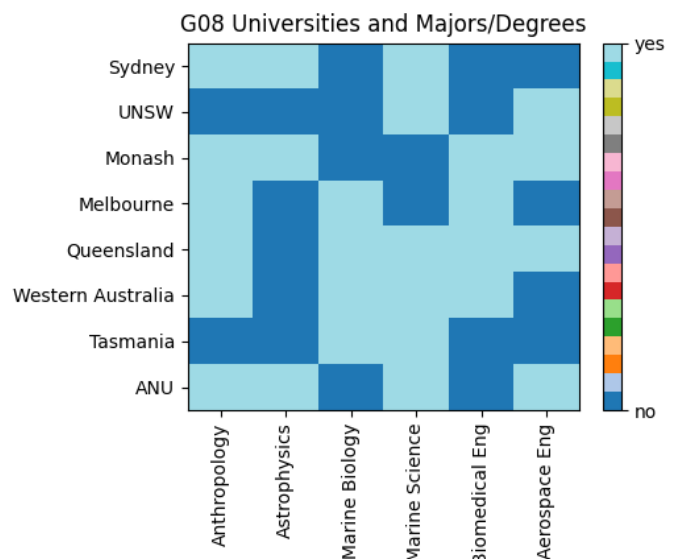
Expenses in G08 Institutions in Australia



iv. Specialisation

In Australia, the structure of Bachelors degrees is quite different from that in the United States. While in the US, Bachelor of Arts (BA) or Bachelor of Science (BS) degrees usually include a major in a specific field of study, in Australia, students can enrol in a Bachelors degree program in a wide range of subjects, from liberal arts to science and engineering. Additionally, in Australia, it is common for Bachelors degrees to offer a specialisation within a degree program, which allows students to focus on a particular area of study within their chosen field. For example, a Bachelor of Science (Advanced Mathematics) degree is a BS degree with a specialization in advanced mathematics. A specialisation is different to a major – most degrees also offer a major which has a similar meaning in Australia as it does in the U.S.

While the US has a more structured approach to Bachelors degrees with a focus on majors, Australia offers greater flexibility with a wide range of degree programs and specialisations. One strength in Australia’s system is the ability of students to obtain a degree in their exact field of interest without having to take “extraneous” subjects. However, the differences in the structure of Bachelors degrees between the two countries may make it difficult to compare academic programs and qualifications across borders. Moreover, Australia’s flexibility comes at the expense of students facing a large number of choices upfront: Consider a hypothetical high-school graduate interested in science and especially math. Should they study a Bachelor of Mathematics? Or a BS with a specialisation in math? Or a BS with a major in Math? Or perhaps even a BA with a Math major? These are a lot of choices for a pre-undergraduate student to make. In the California system, students can just pick a general field of interest (e.g. Science), and they don’t need to work out until further down the line what they want their major to be.



a. Majors

We now analyse the availability of the same majors discussed in section II, but for Australian universities. We consider a sample of 20 of Australia’s universities, including the Go8. The other 12 universities include two ATN, two IRU, four RUN, and four non-aligned universities. The graph to the right below shows a colour-map of offerings for the same majors (minus Urban Studies) that we considered for universities in California, but for Go8 universities. Since the Australian system has both a broad range of Bachelors degrees and majors, we colour a cell as “yes” if the university offers either a degree or a major in the relevant field.

Notice that every six out of eight Go8 universities offer a Marine Science major, and in fact half of these offer a Marine Science degree. 25% of the universities offer an astrophysics major, and 6/8 universities offer one of the given engineering majors. In our full sample (non-Go8 offerings are pictured right), 65% of universities offer either biomedical engineering, biomedical science. Moreover, 61% offer either Marine Biology or Marine Science – there is a lot of overlap between the sciences and engineering at Australian universities. The arts majors are less multitudinous at non-Go8 universities, with only 33% offering a major in anthropology compared to 75% of Go8 institutions.

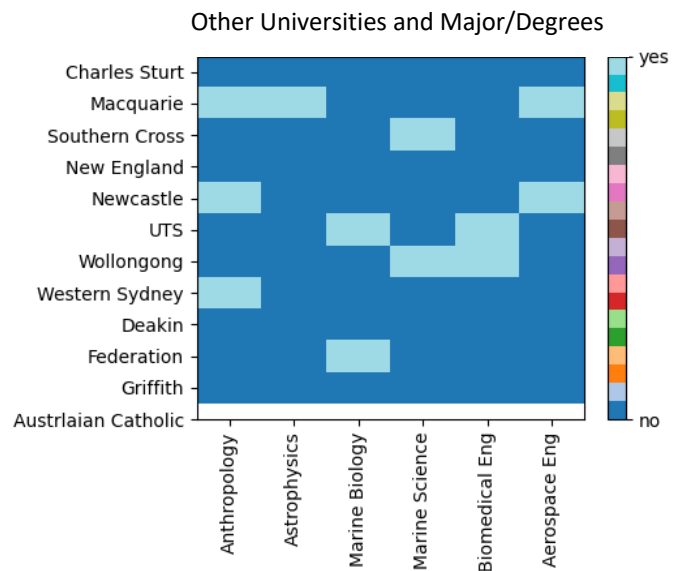
b. Degrees

In order to make comparisons with the Californian system, we consider the number of universities offering a BA and a BSc, as well as other common Australian degrees including a Bachelor of Commerce (BCom), Bachelor of Psychology (B Psych), Bachelor of Nursing (BN), Bachelor of Education (BEd), and Bachelor of Economics (BEc).

The average number of degrees listed on the university web page (including double degrees and honours degrees), for the universities, in our sample is 111. Around 36 of these are honours programs and a number are double degrees, but the sheer number of Bachelors degrees on offer is staggering.

All universities in our example except one offer a BA, and the same is true for a BS. The average number of majors offered in a BA is 30, while the average number of majors for a BS is 19. We similarly find that all universities in our sample except one offer a BCom or BBus (Bachelor of Business). The average number of majors offered in a BCom or B Bus is 8. Go8 institutions offer a larger number of majors in their BA and BS programs. So even within these three Bachelors degrees there is still quite a large scope for choice of major. In theory, arts degrees offer the broadest range of specialisation for students, followed by science degree and then business degrees. However, we consider all three of these degrees to be fairly “broad”.

We find that 60% of the universities in our sample offer a B Psych, and every university that doesn’t offer a B Psych does offer a B Psychological Science. The overwhelming majority of universities offer a BEd (83%) and a BN (85%). Among Go8 institutions, the same 5 universities offer both a BEd and a BN. This marks a point of difference with the Californian system. Education and nursing are not usually considered fields with “high-research”, they are usually practical fields designed to



get people into teaching or nursing jobs. As such, they are rare at UC universities²⁷ but commonplace at CSU. In Australia however, 62.5% of our top research institutions offer degrees in these fields, and so do the majority of non-Go8 universities.

Our data also shows that all but 1 of the Go8 universities (U Melb) offers a Bachelors degree in economics, while only 17% of non-Go8 universities offer a degree in economics. However, among U Melb and the non-Go8 institutions that do not offer a degree in economics, 70% offer a major in economics, so there is some compensation at universities with less variety in Bachelors degrees by at least having majors. It may be that the Go8 universities have the resources to create full degree programs dedicated to a particular field (e.g. economics) while non-Go8 universities (which have much lower resources on average) simply do not have the funds or students to churn out new Bachelors degrees, unlike their Go8 counterparts.

c. Postgraduate Institutions

In Australia, professional degrees such as Bachelor of Nursing, Bachelor of Law, and Bachelor of Medicine are offered at the undergraduate level, whereas in the US, these programs are typically offered only at the graduate level. This means that students in Australia can complete their education and enter the labour force as a professional (or on-track to becoming a professional) with a Bachelors degree, whereas in the US, additional graduate-level education is usually required for most professional careers.

Looking at Law specifically, the vast majority of universities offer an undergraduate law degree, with only four institutions not offering a Bachelors program in law.²⁸ This is in contrast to California, where students who want to study law must first obtain a Bachelors degree in a different subject and then go on to complete a Juris Doctor (JD) degree to become a licensed attorney.

Another very common graduate program is a Master of Business Administration (MBA). Almost all Australian universities offer an MBA program, with only one institution not offering it. In California, only a handful of UC institutions offer graduate business programs, while most (95%) CSU institutions offer an MBA program. A similar story can be told for medicine. This highlights the differences in higher education systems between the two countries, with Australia providing a more diverse range of undergraduate degree options and California focusing more on graduate-level education for professional degrees.

V. Conclusion

Australia and California have different higher education systems with unique strengths and weaknesses. While California has a broader range of private universities, Australia has a strong public university system with a private education sector that is thriving at the vocational level. In California, community colleges play a much more significant role in the higher education landscape than VET-level institutions play in Australia. Although California has a larger population, Australia has a higher number of students enrolled in public universities, with a larger proportion of international students. The difference in international student numbers is likely due to funding, and there has been an increase in international student numbers at UC following budget cuts.

Both systems offer opportunities for students to progress from vocational education to higher education, but the pathways and outcomes are different. The structure of Bachelors degrees and range of majors is also different.

California has a clearly “tiered” system, while top Australian research universities offer programs (such as Nursing and Education) that are very limited at UC universities but widely available at CSU

²⁷ Some UC universities offer an education major, but usually in a specific topic, e.g. Math or Biology, and the offerings are different at different UC universities.

²⁸ This is true not just in our sample of 20 universities from the previous section, but across all universities in Australia.

universities. As California has some of the best public universities in the world, it is useful to understand the differences between the Australian and Californian systems to make more informed decisions about the future of Australia's higher education system to remain and potentially grow in their global attractiveness and competitiveness.

V. Data Appendix

II. Overview of Tertiary Education System in California

i. Institutional Characteristics

- Top Private Institutions in California: Retrieved from Carnegie Classifications website <https://carnegieclassifications.acenet.edu/>

- Percentages of Enrolment across Institutions: Retrieved from the Higher Education in California report by Public Policy Institute of California <https://www.ppic.org/publication/higher-education-in-california-californias-higher-education-system/>

- Key Facts about Community Colleges: Retrieved from California Community Colleges website <https://www.cccco.edu/>

- Map of California State University System: Retrieved from CalState website <https://www.calstate.edu/attend/campuses>

- Facts about University of California System: Retrieved from University of California website <https://www.universityofcalifornia.edu/>

ii. Student Base

a. Enrolment Numbers: Retrieved from the National Center for Education Statistics Integrated Postsecondary Education Data System website <https://nces.ed.gov/ipeds/use-the-data> and California Community Colleges Datamart website <https://datamart.cccco.edu/>

b. Selectivity: Retrieved from the Integrated Postsecondary Education Data System, CollegeCalc website <https://www.collegecalc.org/colleges/california/open-admissions/> and US News Education website <https://www.usnews.com/best-colleges/ucla-1315/student-life>

c. Demographics (Geographics): Retrieved from Integrated Postsecondary Education Data System.

d. Financial Aid: Retrieved from the Integrated Postsecondary Education Data System, US News Education website <https://www.usnews.com/best-colleges/ucla-1315/student-life> and UC SHIP website

iii. Funding

a. Public Funding: Retrieved from the Integrated Postsecondary Education Data System

b. Private Funding: Retrieved from the Integrated Postsecondary Education Data System

iv. Specialisation

a. Snapshot of Degrees/Majors offered: Retrieved from individual university websites

b. Undergraduate and Postgraduate Schools: Retrieved from individual university websites

c. Teaching Staff: Retrieved from the Integrated Postsecondary Education Data System

III. Comparison of Tertiary Education Systems in California and Australia

i. Institutional Characteristics: Retrieved from Times Higher Education rankings <https://www.timeshighereducation.com/world-university-rankings/2023/world-ranking>

ii. Student Mix

a. Enrolment Numbers: Retrieved from Department of Education Selected Higher Education Statistics <https://www.education.gov.au/higher-education-statistics/student-data/selected-higher-education-statistics-2021-student-data> and National Centre for Vocational Education Databuilder website <https://www.ncver.edu.au/research-and-statistics/data/databuilder#tva-program-enrolments>

- b. Selectivity: Retrieved from UAC data on recent ATAR cutoffs <https://www.uac.edu.au/assets/documents/atar/lowest-selection-ranks-dec-r2-2022.pdf> and Forbes article about test free admissions <https://www.forbes.com/sites/michaelnietzel/2021/11/19/university-of-california-reaches-final-decision-no-more-standardized-admission-testing/?sh=36d42af52ec5>
- c. Demographics: Retrieved from Department of Education Higher Education in Australia report <https://www.education.gov.au/higher-education-publications/resources/higher-education-australia>, ABS data, and University Rankings website <https://www.universityrankings.com.au/international-student-numbers/>
- iii. Funding: Retrieved from Department of Education Finance Tables <https://www.education.gov.au/higher-education-publications/resources>, UC budget Retrieved from University of California Office of the President website <https://www.ucop.edu/operating-budget/budgets-and-reports/current-operations-budgets/index.html>
- iv. Specialisation
- a. Snapshot of Degrees/Majors Offered: Retrieved from individual university websites.
- b. Undergraduate and Postgraduate Schools: Retrieved from individual university websites. and [Training.com.au](https://www.training.com.au)