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A Semester in the Life of an Australian Academic

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INTRODUCTION

Familiar yet different: what makes visiting the United States memorable for an Australian, apart from the great size and vigor of the American statistical community, are the unexpected differences which crop up continually amongst rituals we thought we understood. I am based now at the University of Queensland (UQ) in Brisbane on the east coast of Australia. But I started academic life as an Assistant Professor at the University of California in Santa Barbara, and in many ways my first experiences of teaching in my own country were seen through American eyes. I actually write now from a desk at the Naval Postgraduate School, Monterey, California, where I am visiting for 3 quarters. In this article I track my progress through a semester of teaching and academic duties in Queensland, hoping along the way to highlight some of the differences between teaching in Australia and in the US. Some trends toward a more American style of teaching will be discernible. Textbooks, continuous assessment and student teaching evaluations for example are on the increase, while elite subjects are on the decrease. Nevertheless Australian higher education is likely to remain for the foreseeable future a smaller, more centrally organized and uniform system with fewer graduate students but more select and better prepared undergraduates.

My university is large by Australian standards with 25,000 students. It offers a full range of courses and attracts many of the best students in the state. It is an outlier amongst Australian universities of the same size and age in that it does not have a separate statistics department. (The only other Australian university of comparable age without a statistics department is the much smaller University of Western Australia.) Instead the Department of Mathematics has a well-defined Statistics Section, and the Section follows the typical Australian pattern of about 6 lecturers and a tutor lead by a Professor. (Australian groups are very much more uniform than those in the US in both size and strength.) 'Lecturer' in Australia roughly corresponds to 'professor' in the US. Our actual ranks are Lecturer (Assistant or Associate Professor), Senior Lecturer (Associate or Full Professor), Reader (Full Professor) and Professor (Full Professor). Note the lack of a generic title. I wish we would adopt American terminology in this regard.

THE ACADEMIC YEAR

In our academic year, first semester runs from February through June, second semester July through November. The semester I am following is the second of last year. It begins in the middle of winter, which is a pleasant time of the year in Brisbane, sunny and dry and yet not cold, the only time of year I get to wear a sweater. By the end of June, grading and examiners' meetings for first semester are nearly finished. The last thing I do for the semester is to submit an application for an Australian Research Council (ARC) small grant. The ARC is the Australian equivalent of the National Science Foundation, but the small grant concept is one that doesn't exist in the US. Grants for amounts less than AUD20,000 bypass the usual ARC administrative structure. The ARC allocates to each university a certain amount of money each year for grants of less than AUD20,000 based on that

university's large grant track record. The university is then responsible for allocating this money to its own applicants internally. Research grants in Australia are typically for smaller amounts than in the US. There is no such thing as a nine-month appointment in Australia, so there is no need to pay summer salaries to the principle investigators.

THE SEMESTER BREAK

There is a two week break before second semester starts. Like most of the statisticians in my department I spend the first of these weeks at the Australian Statistical Conference (ASC) in Melbourne. What sets Australian conferences apart from their North American counterparts is the much smaller size of the local statistical community. This allows me to know most of the regular attendees, and gives the conferences a cozy feel. With several hundred delegates, the ASC is just small enough for most people to cram into the tea/coffee area during half hour breaks mid-morning and mid- afternoon, and this is a time that I find particularly valuable for finding people and conducting business. The ASC is held in what is called the Australian Vice-Chancellor's common week for the year. This means that the Australian universities have agreed amongst themselves that they will hold no classes in this week to enable faculty and staff to attend any professional meetings that are held. The 'Vice-Chancellor', by the way, is the chief executive of our university. I've never figured out quite what the Chancellor does, a sort of ceremonial head of state. And why do we hold our main conference in winter, in the middle of the academic year, instead of in summer as with most of the larger American conferences? It must be to make it easier for Northern hemisphere colleagues to attend, especially invited speakers.

The second week of July is the last opportunity to finish up non-teaching projects before classes commence again, and I usually try to give as much as attention at this time as I can to my current research project, especially following up contacts and ideas from the ASC. This week is also an opportunity to make sure teaching resources will be available for second semester. I am teaching two subjects, both new to me. ME204 is an introductory statistics subject for engineers in their second year (sophomores) with about 80 students. MS475 is a fourth year honours subject with 8 students. I am especially looking forward to the honours class, as the students are gifted and I will be able to discuss material close to my research interests. Two, sometimes two and a half, subjects per semester is a typical teaching load for us, but class sizes very enormously. This will be the first second semester for several years in which I haven't taught the 700 students in the biological sciences introductory statistics subject. On the other hand, next semester both of my subjects will have fewer than five students enrolled.

THE HONOURS CLASS

The honours class is one which has no real equivalent in the US. Most of our students who specialize in statistics receive a BSc degree after three years of study. The students we think are capable of going on to do a PhD stay on for a fourth year of study and receive an honours degree. Australian students specialize much earlier than do Americans. Those entering Science at UQ have already had for example one or two years of calculus, and usually take a whole year of science subjects even in first (freshman) year. The idea of a liberal education mixing arts, humanities and sciences is left at the high school level. By fourth year honours, our students are studying material at roughly the level of the first year of an American PhD program. Our PhD students do not generally do course-work.

In the recent past, we offered separate subjects for students intending honours right from first year. However student numbers have increased at Australian universities, especially since 1990, while funding at the departmental level has remained steady or decreased. With the pressing need to do more with less, the parallel honours subjects in years one to three were one of the first luxuries to go. Apart from the savings from a teaching point of view, this has had some positive effects. It means that the pass students are less likely to get neglected, and makes entry into fourth year more flexible.

I know basically what I'm going to cover in MS475, and so my main preparation this week is to make sure the software I want to use is available in the computer teaching laboratory. There is no set text, only suggested reading, as much of the material is as yet unpublished or available only in technical journals. Although most of our first and second year subjects do have textbooks set, many lecturers make only limited use of them. Intensive use of textbooks is not a traditional part of Australian or British university education. The lecturers in my department who make most use of textbooks seem to me to be those who have teaching experience in the US.

ME204 requires some more difficult choices. The colleague (now on sabbatical) who usually teaches it has prepared a lot of good quality, written material. I expect my teaching of ME204 to be a once-off affair, since the subject is soon to be superseded in a revision of the engineering statistics course structure, so I commit myself to using my colleague's materials. This will save me preparing the course from scratch, but will limit my ability to personalize the course and will compromise to some extent my teaching style. The engineers have a reputation for being a robust class: a good audience for material which they see as relevant and very intolerant of material that they do not. Australian students are on the whole are markedly less vocal than Americans, less likely either to praise or to criticize, but ME204 is an exception.

My other concern this week is with the two Honours students that I am supervising. Students in their honours year undertake a project which is worth about a third of the year. This may include original research, but is more usually a review of a current area of interest, including ideally some computer implementation and data analysis. The students prepare a written report of around fifty type-set pages, and present a department seminar. I see one student on an as-needs basis and the other at weekly appointments.

SECOND SEMESTER

This semester will have thirteen teaching weeks. Both of my subjects are scheduled for two lectures per week, which would be very unusual in the US. The small number of lectures is partly because our students take five or six subjects simultaneously, but it also seems to me that Australian courses use fewer scheduled lectures to cover a given amount of material than do those in the US. This means that lectures need to be more thoroughly prepared in advance. It reduces the opportunities for unplanned class discussion and gives lectures more the nature of a performance. I think it is fair to say that I give fewer lectures per year than I would if I taught in the US, but that I spend more time on teaching in total.

WEEKS ONE AND TWO

The very first thing in Week 1 is a one hour departmental meeting to arrange class times for the honours subjects. The meeting is attended by both students and lecturers for all the third and fourth year honours subjects, and we basically use a show of hands to choose class times when everyone is available. I don't know if any other departments arrange class times in this way, but it does show to the extent to which we view the honours subjects as being for the department to organize internally. MS475 ends up with lectures on Tuesday afternoon and Friday morning. Unlike lecture times in the US, which are usually Monday/Wednesday/Friday or Tuesday/Thursday at the same time in the same room, our lectures are scheduled whenever timetable clashes allow and wherever availability of rooms makes possible. Like most of the other non-honours subjects, ME204 has already been centrally-timetabled, and has lectures on Tuesday and Thursday mornings, at the same time but in different buildings.

In the first lecture I hand out subject profiles of two or three pages, spend a little time discussing course organization, assessment and tutorial arrangements, and then make a start on the material. Subject profiles have become compulsory at UQ during the last year, at least in the Faculty of Science, although I have always handed them out anyway.

The ME204 subject profile includes week by week topics with corresponding page and problem references in the text, so I will not have to hand out separate tutorial problem sheets. ME204 also has detailed lecture notes type-set in TeX (not all that unusual in Australia) and corresponding overhead projector slides prepared by the previous lecturer. The lecture notes are available from our department office and have spaces where the students can fill in examples which will be worked in class. We charge a small amount for the lecture notes to cover photocopying and handling. The devolution of costs in this way has been a continuing trend in Australian universities in recent years. We will always supply free to students any course materials which are compulsory, such as subject profiles or problem sheets, but in other respects our university has been moving towards a user-pays system wherever practical. In MS475, I hand out the first problem sheet in the second lecture.

Tutorials and laboratory sessions start in the second week. ME204 students will attend one tutorial hour each week. About two thirds of the students are timetabled for the first session on Tuesday and the remainder for the session on Wednesday. I plan to take most tutorials in the computer laboratory. The statistical software is new to the students, so this week I have them work at the terminals through a tutorial introduction to it. There aren't enough terminals for everybody, so I have a regular classroom booked as well. On Tuesday I have one tutor in the classroom and another helping me in the laboratory. On Wednesday I am assisted by one tutor who alternates between the classroom and laboratory as needed. Honours subjects often don't have formal tutorials, but I want to use the computer laboratory this semester for MS475 as well. I have arranged a mutually convenient time with the students, who start this week on their first laboratory exercise. With such a small class I will take the laboratory sessions myself. The rule of thumb in our department is that one can get tutorial assistance with classes of 26 or more students.

Tutorials are a very traditional part of British and Australian teaching, although the style does vary between universities. When I was an undergraduate at the University of Western Australia, tutorials were taken in rooms which sat 13 or 15 students at most, and the time was entirely given to discussions with the tutor. Now at UQ, tutorials often have 100 students in a room with four tutors, and the time is mainly given to working on set problems. Many of our tutors are graduate or

honours students earning extra money, but we also employ one statistician full-time to take tutorials (a 'Senior Tutor'). The Senior Tutor also handles the administration associated with assigning part-time tutors to tutorials. In our department, each lecturer usually takes one tutorial for a subject other than his or her own, usually one of the larger first year subjects, but I don't do so this semester.

WEEKS THREE AND FOUR

The first assessable assignments are set in week 3. The MS475 assignment questions are more searching but similar to content to those in the first tutorial sheet. The idea is that students can get as much help as they like on the tutorial problems, and having become familiar with the material can attempt the assignment questions with limited assistance for assessment. Many subjects in my department work on this alternate tutorial/assignment system. It has the advantage that it cuts down on the bulk of material which needs marking (grading) each week. The system can be defeated however if many of the students attempt only the questions or assessment.

In MS475 the assignments and computer laboratory exercises will together count 30% towards the final assessment. ME204 will have also a mid-semester examination, but the assignments will count only 10%. Australian university courses in general tend to put markedly more weight on the final examination than do those in the US. In my own subjects I like to make assignments and laboratory exercises worth just enough to encourage the students to do them. There is a gradual trend in Australia towards more continuous assessment in the American style. I have mixed feelings about it. It is highly desirable to reduce the tension in the final examination, but continuous assessment inhibits discussion and curiosity during the semester, and the final examination is the only occasion on which the students can be examined on the course as a coherent whole.

Week 4 sees the creation of a departmental Teaching and Learning Committee of which I become Chair. The committee's major project over the next six months will be the preparation of a two-day course to teach part-time tutors how to do their job effectively. The committee and the project are both symptoms of a recent trend in Australian higher education, encouraged by the federal government, towards greater accountability of universities and quality assurance practices.

WEEKS FIVE THROUGH NINE

From Week 5 on I am marking MS475 laboratories and assignments. I am using a four-point-scale: 3 marks for a correct report, 2 for a report which is mostly correct, 1 for handing something in. This cuts down on marking time and allows me to give a faster turn-around. The students accept it well and are less likely to quibble about minor marking decisions. The ME204 assignments are marked by the tutors, but I provide detailed solutions and marking schemes. Written solutions take very much more of my time than they did when I taught in California. They are almost always duplicated and distributed in class, not placed in closed reserve in the library as they might be in the US.

In weeks 7 and 8 my two honours students give department colloquia. Every 4th year honours student gives a half-hour talk to the department on his or her project topic. The talks are scheduled two each Monday afternoon during second semester. In each case I come in to the department on the Saturday or Sunday to preview the talk and give advice. Earlier this year the department invited an outside speaker to give a presentation to the honours and graduate students on how to give a

good talk. We have seen some improvement as a result on what was already a decent standard of presentation. Honours talks are graded by a committee set up for this purpose, and contribute in a small way to the student's project grade.

ME204 has a mid-semester examination in week 8. The exam is made up entirely of multiple choice questions so that it can be computer marked. This is only the second time a mid-semester examination has been given for a statistics subject in my department. The first time was for this same subject in the previous year when it was taught by our new statistics Professor who is encouraging mid-semester examinations.

MID-SEMESTER BREAK

Between weeks 9 and 10 there is a two week mid-semester break. When I was a honours student this was great opportunity to finish the bulk of the honours project, and to catch up with classes. Now it is a great opportunity to keep research and other non-teaching projects ticking over. Many people in the department also prepare their final examination papers at this time, as the university's Examination Section wants to have most of them by week 10. I hate preparing examinations so far in advance (in California it was always the day before) because the last 4 weeks of the course must then be driven by what is on the paper rather than the other way round. Final papers have to be checked for accuracy, length and appropriateness by another member of the department. In our department they are prepared in TeX or LaTeX and supplied camera ready for duplication.

WEEKS TEN THROUGH THIRTEEN

Preparation of solutions and assignment marking intensifies during the last three weeks of the semester. ME204 ends with 4 assignments, MS475 with 3 assignments and 4 laboratory exercises. In the last week I distribute teaching evaluation forms. Student evaluation is a relatively new practice in Australia. I'm certainly the only Australian I know of who has always used it. This year UQ is attempting to make student evaluation an established practice for all the larger subjects, and is offering departments a financial incentive to have it done. In the last week I also read through an early draft of a PhD thesis (I need to complete the student's annual progress report), and provide topic suggestions for another student submitting a PhD scholarship application.

'SWOT VAC'

The week between the end of classes and the beginning of the examination period has always been known to me as 'Swot Vac' (vacation for swotting). I always found the week extremely valuable as a student as it was the first time I could see the lecture course in its entirety and had an opportunity to synthesize some complete message out of it. This week I mark outstanding assignments and put them in envelopes on my door for students to collect. The more conscientious students are working through previous examination papers. There are bound copies of previous exam papers in the library. When I worked in California, professors often re-used examination questions, or occasionally even whole examination papers. One can't do that in Australia!

THE EXAMINATION PERIOD

The examination period lasts four weeks. Both of my examinations this year are by chance in the first week, so I have plenty of time to grade them. I also mark one question on the first year

biological statistics paper (about 900 scripts). We do not use teaching assistants to grade final examinations, so we share the papers amongst ourselves, the statistics papers amongst about six statisticians. The projects of my two honours students also need to be graded. Each project gets two examiners, one besides the supervisor, so I read and grade the projects of two students other than my own. My Australian colleagues can hardly believe that in the US swot vac, setting and grading papers, and even graduation may take place in the space of a week. In Queensland, graduation ceremonies won't be held until well into next year.

No posting on examination results on my door, as in California. Engineering grades are finalized at the Engineering Faculty meeting in the fourth week. Honours grades are finalized at a Departmental meeting. Honours degrees comes in several flavors, usually First Class or Second Class, Division A, but also sometimes Second Class, Division B, and Third Class. Students need a First Class degree to have a good chance of winning a scholarship to do a PhD. There is always a long discussion at the honours meeting regarding which students will get which class. In borderline cases a lot of weight is given to the supervisor's opinion of the project and the student's potential for research, and this year the discussion is particularly passionate. Finally, we celebrate the end of the examination period, and teaching for year, with an informal party at the home of the statistics Professor during the weekend.

As the examinations finish, I learn that I have been successful in my small ARC grant application. Grants have become dramatically more competitive over the last few years, so much so that I have only half what I need for my number one item, namely a PhD scholarship, even though my application received the highest possible rating. I advertise a partial scholarship over the internet and spend a lot of time over the next few weeks talking with potential PhD students. By the time scholarship offers are made and accepted in December, we have about 15 PhD students spread amongst 6 statistics lecturers, mostly recruited from our own honours students. I also begin supervising a Vacation Scholar. Vacation Scholars are usually third-year students eligible for honours next year. The department pays a salary for six to ten weeks over the summer to introduce the students to research and project work. It's a recruiting tool for honours. The student is extremely talented and enthusiastic, and it is pleasure to introduce him to some of my research interests. The year wraps up for me with a research visit to Adelaide, after which the Christmas period is upon us.

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