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FACULTY OF SCIENCE

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Dean's Report to Council 11 August 1994:

Chancellor, Vice-chancellor, Members of Council, I present the 1993 Annual Report of the Faculty of Science.

The Dean of the Faculty during 1993 was Professor Michael N. Barber. As Council will know Professor Barber resigned from the university with effect from early 1994 to take up the position of Pro-Vice-Chancellor (Research) at UWA. An election for Dean took place in December and I was elected with effect from February 1st 1994. I present this report, therefore, on behalf of my predecessor. I would like to take the opportunity on behalf of the Faculty and myself personally of expressing our appreciation of the efforts that Professor Barber made to ensure a smooth transfer of responsibilities from one Dean to the next. The Faculty has already directly expressed its thanks for the extremely able way in which Professor Barber carried out his duties whilst Dean.

The formal Report of the Faculty as usual contains detailed summaries and comments on the activities of its departments and divisions, provided by Heads, as well as the Dean's overview. A significant change from last year is that from September 1993 the Interdisciplinary Engineering Program (now the Department of Engineering) and the Department of Computer Science were re-assigned to the new Faculty of Engineering and Information Technology, whilst remaining associate members of the Faculty of Science. Additionally, the Department of Mathematics became one of the two components of the restructured School of Mathematical Sciences, along with the Centre for Mathematics and its Applications, whilst remaining fully a part of the Faculty of Science.

The Faculty's Report for 1993, therefore, provides detailed information on nine rather than the previous 11 academic units; these being: the three Divisions of the School of Life Sciences, Biochemistry and Molecular Biology, Botany and Zoology, and Psychology, the two Departments comprising the School of Resource and Environmental Management, Forestry and Geography, and the Departments of Chemistry, Geology, Mathematics, and Physics and Theoretical Physics. It also provides overviews of the Schools of Life Sciences and Resource and Environmental Management and of some specific programs.

I will not here take up your time with repeating what is already available in great detail in the written report, nor with attempting to summarize all the major features of the Faculty's activity. I recommend the Report to you as a comprehensive and lively picture of the activities, achievements and difficulties of the Faculty's staff and students during 1993.

What, nevertheless, may be of value is if I make a few brief points about the state of the Faculty during 1993, as I found it as incoming Dean.

The basic points are simple to state:

1. There remained and remains continuing high-quality student demand for the undergraduate and graduate education which the Faculty provides.

2. The Faculty maintained or improved its excellent level of performance in teaching and research.

3. Resources for staffing, technical support and infrastructure continued to decline.

1. In 1993 the total student load in the slimmed down Faculty of Science was about 20% of the total load in the university, comprising 1417 undergraduate EFTSUs and 222 postgraduate EFTSUs. I sometimes think that EFTSUs give misleading picture of the reality of teaching load. This undergraduate EFTSU load translates into about 9,000 effective undergraduate unit enrolments. There was a drop of undergraduate EFTSUs in 1993 compared to 1992. The drop, however, was self-imposed. In 1993 the TER cut-off for the BSc degree was raised from 69.75 to 80.40, an increase in the TER cut-off of nearly 26 percentile points from 1991! In 1994 the TER cut-off was lowered to a more reasonable 72.6, producing an increase in commencing students. This lowered 1994 cut-off, it is worth remarking, is still comparable to the BSc cut-off at the University of Sydney, and is nearly 8 points higher than the cut-off for the BA and 10 points higher than that required for the BEc and BComm degrees in the other two largest Faculties.

The Faculty remains pre-eminent in honours and postgraduate education in science, producing 111 honours students (nearly half of whom were awarded first-class honours, and 11 of whom were awarded university medals). Its graduate numbers with FEIT in 1993 (254.4) were equal to about 50% of the total number of graduate students in all the science Schools of the IAS.

2. In research, the Faculty in 1993 produced 43% of all publications in the Faculties and ITA, was awarded about 70% of all competitive Commonwealth grant dollars in The Faculties, gained with FEIT about $6.4 million in external research funding (not including the $1.2 million earned by FPIS students), and continued to attract large numbers of postdoctoral and visiting fellows to participate in its research programs. The many particular achievements of its staff and students are noted in the Report.

In teaching, I note the continual curriculum review and development in all departments, the overall undergraduate fail rate of those sitting in Faculty units of 8% (compared to 10% for

HDs), the high level of honours achievement (Kwong Joo Leck deserves a special mention for achieving first-class honours degrees in both Psychology and Neuroscience and two university medals in the span of a normal four-year honours degree), the success of the Distinguished Scholar Program in Science and the Graduate Program in Scientific Communication (which this year enrolled its first Masters students), the first graduates of the BScREM, the award of the Vice-Chancellor's Award for Teaching Excellence to Dr Rosemary Martin of Botany and Zoology, the emphasis on a strong practical/laboratory/fieldwork component in science teaching, the several highly successful outreach activities directed at the local, national and international community, and a host of more specific developments.

3. The student load in 1993 is an increase of 40% over the 1989 figure. Over the same period, the Faculty has lost nearly 50 positions, most in the technical area. The student-staff ratio in 1993 and 1994 is just over 15:1, from 10:1 in 1989. This does not sound too bad compared to other Faculties until one remembers that science degree points usually represent about twice the teaching contact hours found in other degrees, comprising a full lecture course with laboratory/fieldwork training of the same or even more numbers of hours. It is a lot worse too if one recalls the loss in technical staff who service science teaching activities, and the continuing reduction in the share of The Faculties' equipment allocation going to departmental equipment budgets in the Faculty of Science. As the Dean pointed out last year, the Faculty faces the major problem of teaching equipment obsolescence. The Faculty does not have the money to replace deteriorating infrastructure, the sums required being in the order of millions. The approach to the Major Equipment Committee in 1993 to fund teaching infrastructure in the Faculty was rejected. The problem remains unresolved, although it is hoped that an approach by The Faculties to VCAG will produce some kind of solution.

This litany of funding-based problems will probably not surprise Council. I will not dwell on its space and accommodation problems, stretching back to 1991 and SPAM 1, except to note that these problems, described in the Report (by BOZO and Psychology) and by Professor Cockburn in the pages of the Canberra Times, are not exaggerated. But it should and will be aware that a new danger has materialized. The ANU's research quantum allocation from DEET has just been reduced by 25% ($1.5 million for 1995). The Faculty of Science earns nearly 35% of its budget from external sources. Twenty per cent of its Faculties' Resources Committee budget has come from the research quantum and ARC infrastructure allocation in recent years, precisely because of the success of the Faculty in attracting Commonwealth Competitive funding. The Faculty is seeking in its strategic planning for the next 10 years to raise the quantity and quality of both its research and teaching. The danger now is that instead of at least steady state or improved resources, we shall once more face reduced funding.

I raise this at Council because it is a problem not merely for the Faculty of Science and The Faculties but for the whole university. A financially viable Faculty of Science functioning at the highest standards is indispensable for the ANU to achieve its mission. How are the successes of the present to be assured in the future? This is the fundamental question that now faces the Faculty and the university.