

THE CANBERRA UNIVERSITY COLLEGE

Department of Statistics

ANNUAL REPORT, 1959

Staff

The department came into being at the beginning of the year, when Professor E.J. Hannan took up his appointment as Professor of Statistics. Dr. C.E.V. Leser, Senior Lecturer, transferred from the Department of Economics to this department. Mr. S.S. McBurney and Mr. G.A. Watterson acted as part-time lecturers for part of the year.

Mrs. H. Plovits devoted part of her time to the department's secretarial work until March, when Mrs. M. Stern was appointed as Secretary of the department. In addition to her secretarial duties, Mrs. Stern gave a great deal of computing assistance to both Professor Hannan and Dr. Leser.

Courses

Lectures and tutorials were given in three subjects, one of which - Theory of Statistics Part 11 - had never been given before in Canberra. Professor Hannan, assisted by Mr. McBurney, was responsible for  $1\frac{1}{2}$  terms of Statistical Method; Dr. Leser for the remaining  $1\frac{1}{2}$  terms. Theory of Statistics Part 1 was given by Dr. Leser, Theory of Statistics Part 11 by Professor Hannan (and for the last 2 weeks by Mr. Watterson).

Enrolments and examination results

Subject	Examination students 1)	Non-examination students	Sat for examination 2) (with Honours)	Passed (with Honours)
Statistical Method	42	-	33	19 (3)
Theory of Statistics Part 1	7	1	3	3
Theory of Statistics Part 11	4	1	4 (2)	4 (1)

1) No separate honours course was given

2) No special honours work was prescribed except in Theory of Statistics Part 11, where a special project had to be done by candidates sitting for honours.

Enrolments in Statistical Method were considerably higher than in 1958, when 23 students enrolled as examination students and 22 completed the course. Forty-one students enrolled in the first term of 1959, and 1 further student transferred from Melbourne to Canberra during the year. For various reasons, 9 students did not complete the course. Among the students there were 11 Statistical Cadets who took the subject in their first year of study, contrary to the general practice. This proved difficult for a number of them, and although all 11 completed the course, only 5 passed the examination, including 1 with 3rd class honours. Seven other full-time and 15 part-time students sat for the examination; of these 4 and 10 respectively passed, 1 in each category with 3rd class honours.

In Theory of Statistics Part 1 enrolments were also higher than in



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previous years, but of 7 students 2 withdrew during the year, 1 did not complete the practical work, and 1 who completed it did not sit for the examination. The remaining 3 students all passed. All the four Theory of Statistics Part 11 students completed the course, and all of them passed, including 1 with 3rd class honours.

#### Relations with Melbourne University

Both members of the department visited Melbourne during the year and kept in close contact with Professor Polglaze of the Economics Department and with Professor Belz of the Statistics Department.

As in previous years, Dr. Leser acted as First Examiner in Statistical Method for the Canberra students.

#### Research and publications

The following papers written by members of the department appeared in 1959:

E.J. Hannan, "The estimation of the spectral density after trend removal", *Journal of the Royal Statistical Society, Series B*, vol. 20 No.2, 1958, (issue appeared late).

C.E.V. Leser, "Migration and the Australian work force", *Economic Record*, vol. 35, August 1959.

Professor Hannan completed a book on time series, the printing of which reached the galley proof stage. In addition, he worked on: 1) the estimation of seasonal variation, 2) the general theory of canonical correlation, 3) the concept and spectral theorems of stationary processes, 4) a central limit theorem for multiple regression systems, 5) multiple time series. A paper on estimation of seasonal variation was accepted for publication. A paper on canonical correlation and stationary processes was read by Professor Hannan to the Institute of Mathematical Statisticians at the annual meeting in Washington.

Dr. Leser carried out research on: 1) work force participation, 2) demand functions for commodity groups, 3) methods of trend construction in time series. Two papers on demand functions were accepted for publication.

#### Other activities

Professor Hannan compiled an estimate of future student enrolment for the Registrar of the College. In addition, the members of the department gave statistical advice to other members of the College, the Australian National University, the Bureau of Agricultural Economics, the University of Queensland and others.

Professor Hannan gave two lectures on time series as part of an operational research course at the School of Physics, University of Sydney, in February, and again two lectures in September. Dr. Leser read a paper to the Demography Seminar of the Australian National University, and a paper to the Canberra Sociology group.

Professor Hannan served on the steering committee which was formed to bring a local Operations Research Society into being. Both Professor Hannan and Dr. Leser became foundation members of the society. Professor Hannan also became a full member of the Statistical Society of New South Wales and joined the Advisory Panel for the Australian Journal of Statistics. Dr. Leser became a member of the Econometric Society.

Professor Hannan was jointly responsible with Professors Moran and Atkinson for a series of seminars held in the Statistics Department



of the Australian National University. Both statistics departments also helped to sponsor a visit to Canberra and an address by the eminent statistician Professor Sir Ronald Fisher, F.R.S.

Study Leave

Professor Hannan was awarded a visiting associate professorship at the Department of Statistics of the University of North Carolina, to carry out research in mathematical statistics. For this purpose he was granted study leave for 8 months from October 1959 onwards. During his absence, Dr. Leser acted as head of the department.

Future developments

Statistics units to be given in future, independently of Melbourne University, were discussed. In addition to units on the lines of Theory of Statistics Parts I and II they include a modification of "Statistical Method" which would be suitable for the first year of study; a variant of Theory of Statistics Part II which emphasises sampling and other problems encountered by economic statisticians; a fourth year honours unit; an introduction to statistics for scientists; and an introduction to operations research techniques.

(Signed)

C.E.V. Leser  
Acting Head of the Department

3rd February, 1960.