

## **DEPARTMENT OF STATISTICS**

### **ANNUAL REPORT 2004**

#### **Highlights**

In 2004, Associate Professors Alan Lee and Chris Triggs were appointed to Chairs in the Department of Statistics after an international search. Foundation Head of Department, Professor Alastair Scott, retired at year's end. It is a mark of his distinction that a conference sponsored by the International Association for Survey Sampling is to be held in his honour in Auckland in April 2005.

In the PBRF Auckland was ranked top in the country for statistics. Although the Department has an unusually high proportion of teaching-only staff it ranked in the top half of Science Faculty departments and in about the top third of departments university-wide. Additionally, in 2004 Statistics became the 3<sup>rd</sup> largest Department in the Faculty of Science in efts terms.

Paul Murrell became Chair-elect of the Statistical Graphics Section of the American Statistical Association and also gave the opening keynote address at the 2004 UseR! conference in Vienna. Chris Wild gave the opening plenary address at the 2004 Conference of the Royal Statistical Society, was elected to the Council of the International Statistical Institute, and was in the second year of his Presidency of the International Association for Statistics Education. Marti Anderson and Rich Ford won a new \$150,000 per annum contract for estuarine monitoring work from the Auckland Regional Council at Whitford. This adds to several larger ongoing contracts for the Okura and other estuaries. Marti also joined the University of New South Wales' Women in Science Distinguished Visitors Program. Rachel Fewster won an Early Career Excellence Award, one of George Seber's many books was republished in the Wiley Classics Library, David Scott served on the CPI Revision Advisory Committee established by Statistics New Zealand for a major review of New Zealand's cost-price index, and Maxine Pfannkuch served on the Ministry of Education Mathematics Curriculum Reference Group representing the New Zealand Statistical Association Education.

In a good year for prestigious external scholarships for PhD students, Steven Miller won a Bright Futures Top Achiever Doctoral Scholarship, Debbie Leader won an Bright Futures Enterprise Scholarship and (Sarah) Qin Song won a New Zealand International Postgraduate Research Scholarship. Our PhD programme was also at record level.

Two new courses were started this year: Stats 125 catering for the mathematically talented with probabilistic interests and a highly innovative course (Stats 150) called "Lies, damned lies and statistics" which addresses issues of statistical literacy and information flows. A CD of animated, narrated, Powerpoint lectures was produced for Stage 2 applied statistics. Newly established electronic forums at Stage 1 and 2 were very heavily used with the Stage 1 forum experiencing over 31,000 hits in August. Teaching Improvement Grants were gained by Rachel Cunliffe to investigate the use of instant messaging in the delivery of tutorial assistance and a team to produce high quality learning materials for the SPSS package to be used in the Psychology, Marketing and Statistics Departments.

Our annual "Year 13 Statistics & Modelling Workshop" (organised by Matt Regan, Rachel Cunliffe and Ross Parsonage) continues to grow, drawing 125 secondary maths teachers to the Tamaki Campus for Tuesday 16 November from as far away as Wellington.

#### **Background**

The Department of Statistics is the largest in New Zealand and, as far as we can ascertain, Australia. In 2004 there were approximately 40 full-time-equivalent academic staff, including 20-fte staff with contracts that involve research, and 5-fte general staff. The Department taught 947 equivalent full-time students (efts) in 2004. We have been fortunate in not only avoiding the contraction that has afflicted the Statistics discipline in other Australasian universities, but actually prospering. Our good health and growth has been largely due to gaining and retaining most of the service teaching of statistics within the University. The Department has a sizable presence at the Tamaki Campus with 10 full-time academic staff including 5 of our 7 staff-members at Associate Professor and above. There were also 6 PhD students. The accumulation over time of so many Statistics staff at Tamaki was much more dictated by space constraints in the City than student numbers or active research synergies at Tamaki. There is a great deal of travel by Tamaki staff members into the City to teach with subsequent impacts on the staff-productivity and Departmental cohesiveness.

## I DEVELOPMENTS IN TEACHING

In 2004, Statistics became the 3<sup>rd</sup> largest Department in the Faculty of Science in efts terms.

Two new courses were started this year: Stats 125 catering for the mathematically talented with probabilistic interests and a highly innovative course (Stats 150) called "Lies, damned lies and statistics" which addresses issues of statistical literacy and information flows. Stories about the course appeared in several community newspapers and in the Royal Society Daily News.

A CD of animated, narrated, Powerpoint lectures was produced for Stage 2 applied statistics. Newly established electronic forums at Stage 1 and 2 were very heavily used with the Stage 1 forum experiencing over 31,000 hits in August. A graduate forum was also established and carried substantial traffic. Our intention is to extend these to many more courses in 2005. Our commitment to exploiting new means of communication provided by information technology is further exemplified by the Teaching Improvement Grant awarded to Rachel Cunliffe to investigate the use of instant messaging in the delivery of tutorial assistance. Five secondary-school students successfully undertook Stats 101 in semester 1 trialling distance/'no lecture delivery' learning. It was a select group (3 of the 5 came in the top 30 out of 2000 or so students in Stats 10x course that semester) all from the same girls' school. Doing this gives us experience with different possibilities for no-lecture delivery which may be useful, for example, for our General Education offerings in 2006.

The main computer package being used in Stage 1 will be changed in 2005 from Minitab to SPSS to better prepare students who will go on in other subjects, particularly Psychology and Marketing for which our stage 1 courses are prerequisites. In late 2005 the Department negotiated a deal through the Head Office of SPSS Australia to allow student home use of SPSS at a price that is very much less than that of the regular student version of SPSS. A Teaching Improvement Grant was obtained to produce high quality learning materials for the SPSS package to be used in the Psychology, Marketing and Statistics Departments.

A very successful 4-day workshop was run for our stage 1 team in July utilising Jessica Utts (a distinguished author, statistician and statistics educator from the University of California Davis brought here for the purpose) in presentations and brainstorming sessions.. The workshop was funded using prize money from our 2003 National Teaching Excellence Award. We are planning something similar for 2005. While Jessica Utts was here we shot a 30 minute movie interview, clips from which are used in the new statistical literacy course.

The Restructuring Project gave impetus and urgency to plans for updating and modifying our teaching programmes. Approximately 10 courses are to be deleted for 2006 with a similar number of new or replacement course added. At undergraduate level the main changes are that experimental design and survey sampling will each become full courses at stage 3, and there will be new courses in applied time series analysis and statistical programming. These courses will be designed so that they also serve not only statistics majors but also students with in other fields where these techniques are used.

As in previous years, we were able to offer a comprehensive range of 700-level courses, in part by drawing on the services of lecturers from other Departments in the University (particularly Community Health and the Clinical Trials Research Unit).

### Enrolment Patterns

Statistics became the 3<sup>rd</sup> largest Department in the Faculty of Science in Efts terms in 2004 (after the School of Biological Sciences and Computer Science). The numbers in courses were fairly similar to 2003. Most of the increase in level 1 efts was due to a change in efts splits. The sharply increased numbers in 2003 at levels above stage 1 were maintained. This can be seen in the set of tables given on the next page. We have never been able to uncover a cause for the one-off drop in enrolments in 2000 (which had a significant flow-on effect in 2001) so must think of this as symptomatic of the volatility to be expected in enrolment numbers.

Note that the International/Domestic splits for 2003 and 2004 are based on August projections of end-of-year figures.

TOTAL Efts								
Level	1997	1998	1999	2000	2001	2002	2003	2004
1	352	347	365	310	371	421	418	527
2	201	205	210	184	161	187	222	248
3	94	106	101	106	102	97	116	112
Grad	29	30	47	48	42	53	66	61
<b>Total</b>	679	690	723	649	675	759	823	947

PERCENT INTERNATIONAL Efts								
Level	1997	1998	1999	2000	2001	2002	2003	2004
1				8%	16%	25%	24%	24%
2				7%	10%	17%	27%	30%
3				5%	5%	9%	16%	26%
Grad				10%	9%	11%	18%	15%
Of Total				7%	13%	20%	23%	25%

INTERNATIONAL Efts								
Level	1997	1998	1999	2000	2001	2002	2003	2004
1				24	59	103	99	124
2				13	16	31	59	75
3				5	5	9	19	29
Grad				5	4	6	12	9
Total				47	85	149	190	236

DOMESTIC Efts								
Level	1997	1998	1999	2000	2001	2002	2003	2004
1				286	312	318	322	403
2				171	144	157	164	173
3				101	96	88	97	83
Grad				44	38	47	55	52
Total				602	591	610	638	711

## II OTHER STUDENT MATTERS

### Staff-Student Liaison Committee

Joss Cumming continued her successful running of this committee in 2004. Four meetings were held with good participation from staff and students. The atmosphere at all of these meetings was extremely positive and they have been very valuable as a means of identifying problems students encounter so that they can be solved, and increasing staff understanding of student attitudes and concerns.

### Scholarships and Prizes

<i>Senior Scholarship in Statistics:</i>	Peek, Mathew Regan, Zoie
<i>Senior Scholarship in Operations Research:</i>	Patel, Sanjay
<i>Annual Prizes in Statistics:</i>	Forster, Michael Wickham, Charlotte
<i>Statistics New Zealand Prize:</i>	Dong, Christine
<i>NZ Aluminium Smelters Prize:</i>	Chen, William Kwon, Hye Sun
<i>Senior Prizes:</i>	Jia, Jia YU, Lup Chi Zang, Lan Luk, Yi-Kit Wang, Wei Ashwell, Duncuncan Li, Qing Su, Hecy Wei Han Sun, Zhan Chen, Kaifan Park, Eun-Hee Yang, Huaning Murphy, Iain David

Su, Shaohong  
Goh, Li'En Liz-Ann  
Shand, Angela Jayne  
Hearne, Lindsay Joy

### Summer Studentships

Faculty of Science Summer scholarships were offered to the following (almost all of whom accepted):

Maarten De Beurs	Rat invasions and habitat selection on New Zealand offshore islands
Robert Harrison	New statistical methods for assessing variety trials.
Jia Jia	User optimal vs social optimal behaviour in queuing networks
Yi Lin Jia	Comparing GLMMs in two statistical softwares
Jennifer Jury	Temporal change in fish assemblages in northeastern New Zealand
Hye Sun Kwon	Contract scheduling for business portfolios
Hecy Wei Han Su	Fitting complex distribution to data
Charlotte Wickham	Testing for inbreeding in small and expanding populations using genetic data.
Lan Zhang	Non-parametric methods of analysing 2 level factorial designs
Dan Fu	Development and optimization of Markov chain Monte Carlo techniques for the problem of determining parameters for coalescing binary systems & neutron stars observed with laser interferometric detectors
Jing Wang	Consistency of social science datasets in New Zealand
Mark Wheldon	Statistical literacy survey
Andrew Williams	Rat invasion patterns on Great Barrier Island and in the Bay of Islands.
Linda Rosamund	Consistency of social wellbeing measures within New Zealand's social science datasets

### III EQUAL OPPORTUNITIES

We are very conscious of EEO issues in appointments and promotions processes. We make every attempt to accommodate the needs of those with heavy family responsibilities. Dr Wiremu Solomon Science represents the Department on the Faculty of Science EO Committee and Dr Marti Anderson is Departmental liaison with Women in Science and Engineering.

#### Maori and Pasifika Staff

We now have 3 FTE Maori teaching staff in the Department. Dr Ross Ihaka is a Senior Lecturer, Dr Wiremu Solomon is a Lecturer who has a joint appointment with Mathematics, Rachel Cunliffe is a Senior Tutor and Susan Wingfield is a half-time Tutor working in the Maori/ Pasifika Rooms. Also staffing the Maori/ Pasifika Rooms are Senior Tutors, Garry Nathan and Viliami Latu (of Tongan origin) who have joint appointments with Mathematics. We also had one Maori Research Fellow.

#### Staff Gender Equity

Of the 27 equivalent full time positions at lecturer/senior tutor level or above, women comprise 7 FTEs, or approximately 25%. Although no woman is yet above the Senior Lecturer rank progress is being made. Following the last two promotions rounds 3 women are now above the SL bar.

#### EEdO

Wiremu Solomon had primary EEdO responsibilities for the Department.

The Department does not have any large problems with gender equity among students. We have very close to gender parity at all levels except PhD where a third of students are female.

The student population is approximately 55% Asian and the Department does have large numbers of students for whom English is not their first language. A CD of the stage 1 lectures in which in which the voice-over narrations for all of the lectures are in Mandarin was available for sale at a small fee and about 200 were sold. More could be circulating through copying. Large changes are being made to the presentation of the course in preparation for 2006, however, and in view of the level of uptake we do not see updating this CD as a high

priority. At Stage 2 we continue to teach structured forms of writing about the messages in data, partly to overcome language difficulties, but more importantly to help students organise their thoughts. The composition of our complement of student-tutors and demonstrators now largely reflects the diverse set of ethnic and language backgrounds of the students they are helping.

The Department continues to cooperate with the Student Learning Centre to provide foundation and supplementary workshops for students who are under prepared for first-year study.

Special efforts being made to help Maori and Pacifica students are described in the next section.

#### **IV TREATY OF WAITANGI**

Dr Ross Ihaka serves on the Science Maori Responsiveness Committee and Susan Wingfield serves on the Maori and Pasifika in Science Committee.

Over recent years, the Department has worked in partnership with the Department of Mathematics as originators of the Tuakana (peer mentoring) Programme concept that has now been adopted quite widely across the university. This and targeted tutorials and workshops at first-year level run through our Maori and Pacifica rooms continue to be our main focus in this area. The Maori and Pacifica operations of the two Departments work together so seamlessly that they are almost a single operation. The distinctions are even more blurred by the fact that many of the staff involved hold or have held joint appointments. There are 2 moderately large study rooms for Maori and Pacifica students. Several computers and facilities to facilitate social networking are provided. The rooms are adjacent to the offices of the Maori and Pacifica Tutors. Students are contacted personally by phone and invited to participate. Despite these efforts and the demonstrated benefits of participation, however, there are problems in raising levels of regular participation by Maori and Pacifica students high enough to have a significant impact on problems such as lower pass rates.

We have continued with a slight adaptation of the successful Mathematics Department concept of Aldis Scholarships and given 8 scholarships to students who had just completed high school and enrolled in STATS 108 at Summer School. These scholarships also give a sharp focus to school visits.

#### **V RESEARCH**

The Department has 20 staff with research expectations in their contracts.

##### **Highlights**

Auckland was ranked top in the country in the PBRF for statistics. Although the Department has an unusually high proportion of teaching-only staff it ranked in the top half of Science Faculty departments and in about the top third of University of Auckland Departments.

Once again there has been growth in research productivity. There was a 20% increase in the number of refereed articles for 2004 over 2003 after a 40% increase of 2003 over 2002 which in turn showed a marked improvement over 2001. The 17 editorial roles for international journals held by Statistics staff is a clear mark of international regard.

Paul Murrell became Chair-elect of the Statistical Graphics Section of the American Statistical Association and also gave the opening keynote address at the 2004 UseR! conference in Vienna. Chris Wild gave the opening plenary address at the 2004 Conference of the Royal Statistical Society, was elected to the Council of the International Statistical Institute.

Rachel Fewster won an Early Career Excellence Award. The republishing of George Seber's 1984 book *Multivariate Observations* in the Wiley Classics Library is a mark of Wiley's recognition of the quality and staying power of this encyclopaedic work.

Marti Anderson and Richard Ford won a new \$150,000 per annum contract for estuarine monitoring work from the Auckland Regional Council at Whitford. This adds to several ongoing larger contracts for the Okura and other estuaries. Agreement was reached with Primer-E Ltd to commercialise Marti's nonparametric multivariate analysis software largely for ecological researchers. She also accepted an invitation to join the University of New South Wales' Women in Science Distinguished Visitors Program.

In a good year for prestigious external scholarships for PhD students, Steven Miller won a Bright Futures Top Achiever Doctoral Scholarship, Debbie Leader won an Bright Futures Enterprise Scholarship and (Sarah) Qin

Song won an New Zealand International Postgraduate Research Scholarship. Our PhD programme was also at record level.

We had a steady stream of international visitors of whom the most prominent is John Chambers, the designer of the S language and 1998 winner of the prestigious Software System Award of the Association of Computing Machinery, here for 6 weeks to work with the R team and present a series of lectures. Also among them were Hal Caswell and Christine Hunter who joined us for three months from Woods Hole Oceanographic Institution near Boston. Hal's visit was funded by a MacLaurin Fellowship from the NZIMA Centre for Research Excellence.

## General

Research in the Department is notable for the interactions with other departments and research groups. There are strong connections with the Department of Community Health, the Clinical Trials Research Unit (both now constituents of the School of Population Health), the New Zealand Quality of Healthcare Study, the Department of Engineering Science, ESR, the Forest Research Institute, Crop and Food Research, the Department of Mathematics, the School of Biological Science, and the School of Geography and Environmental Science. Typical links include joint appointments, shared research grants, shared supervision of postgraduate students, and the writing of joint papers.

Members of the Department are working in the areas of statistical computing, sample surveys, experimental design, statistical ecology, statistics in fisheries, Bayesian statistics, medical statistics, forensic science, applied probability and stochastic operations research, and statistics education.

A major ongoing strength is the statistical computing software R. Originally developed by two members of the Department, Ross Ihaka and Robert Gentleman, development of the software is now carried out by an international group that also includes the Department's Paul Murrell and many of the world's foremost experts in statistical computing. The software has gained enormous recognition worldwide and is included in all major distributions of the Linux software. The original paper by Ihaka and Gentleman describing R now has approximately 1,000 citations.

## PUBLICATIONS

### Publications, Department of Statistics, 2004

#### (a) Books

SEBER, G. A. F. *Multivariate Observations, Paperback Edition*. New Jersey, John Wiley & Sons, 686 pages, 2004. (Wiley Classics library.)

#### (b) Book Chapters

BUCKLETON, J.S.<sup>3</sup>, CLAYTON, T.<sup>3</sup>, TRIGGS, C.M. 'Parentage Testing'. In: Buckleton, J.S., Triggs, C.M., Walsh, S.J. (eds) *Forensic DNA Evidence Interpretation*. Boca Raton, FL, CRC Press, 341 - 394, 2004.

BUCKLETON, J.S.<sup>3</sup>, TRIGGS, C.M. 'Relatedness'. In: Buckleton, J.S., Triggs, C.M., Walsh, S.J. (eds) *Forensic DNA Evidence Interpretation*. Boca Raton, FL, CRC Press, 123 - 148, 2004.

BUCKLETON, J.S.<sup>3</sup>, TRIGGS, C.M., CLAYTON, T.<sup>3</sup> 'Disaster Victim Identification, Identification of Missing Persons, and Immigration Cases'. In: Buckleton, J.S., Triggs, C.M., Walsh, S.J. (eds) *Forensic DNA Evidence Interpretation*. Boca Raton, FL, CRC Press, 395 - 438, 2004.

FEWSTER, R.M., BUCKLAND, S.T.<sup>3</sup> 'Assessment of Distance Sampling Estimators'. In: Buckland, S.T., Anderson, D.R., Burnham, K.P., Laake, J.L., Borchers, D.L., Thomas, L. (eds) *Advanced Distance Sampling*. Oxford, Oxford University Press, 281-306, 2004.

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PFANNKUCH, M., WILD, C.J. 'Towards an understanding of statistical thinking'. In: D. Ben-Zvi and J. Garfield (eds) *The Challenge of Developing Statistical Literacy, Reasoning, and Thinking*. Dordrecht, The Netherlands, Kluwer Academic Publishers, Chapter 2, 17-46, 2004.

VAN AARDE, R.J.<sup>3</sup>, WASSENAAR, T.D.<sup>3</sup>, NIEMAND, L.<sup>3</sup>, KNOWLES, T.<sup>3</sup> & FERREIRA, S.M. 'Coastal dune forest rehabilitation: A case study on rodent and bird assemblages in northern KwaZulu-Natal.' In: *Coastal Sand Dunes: Ecology and Conservation*, Martinez, M.L., Psuty, N. & Lubke, R. (eds), *Ecological Studies Series*, 171, Springer-Verlag, Heidelberg. Chapter 7, 103-115, 2004.

**(c) Journal Articles**

ANDERSON, M.J., FORD, R.B., FEARY, D.A.<sup>3</sup>, HONEYWILL, C.<sup>2</sup> 'Quantitative measures of sedimentation in an estuarine system and its relationship with intertidal soft-sediment infauna'. *Marine Ecology Progress Series*, 272, 33-48, 2004.

ANDERSON, M.J., MILLAR, R.B. 'Spatial variation and effects of habitat on temperate reef fish assemblages in north eastern New Zealand'. *Journal of Experimental Marine Biology and Ecology*, 305, 191-221, 2004.

BEBBINGTON, M.<sup>3</sup>, POLLETT, P.K.<sup>3</sup>, ZIEDINS, I. 'Product form approximations for highly linear loss networks with trunk reservation'. *Mathematical and Computer Modelling*, 38, 1147-1156, 2003.

BERG<sup>5</sup>, A., MEYER, R., YU<sup>2</sup>, J. 'DIC as a Model Comparison Criterion for Stochastic Volatility Models'. *Journal of Business and Economic Statistics*, 22, 107-120, 2004.

BLACK, M.A. 'A note on the adaptive control of false discovery rates'. *Journal of the Royal Statistical Society, Series B*, 66, 297-304, 2004.

BROADHURST, M. K.<sup>3</sup>, MILLAR R. B., MCBETH, W. G.<sup>4</sup>, YOUNG, D. J.<sup>3</sup>, GRAY, C. A.<sup>3</sup>, KENNELLY, S. J.<sup>3</sup> 'Selectivity of diamond- and novel square-mesh codends in an Australian estuarine prawn-trawl fishery'. *Fish. Res.*, 67, 183-194, 2004.

BROADHURST, M. K.<sup>3</sup>, MILLAR, R. B., YOUNG, D. J.<sup>3</sup>, WOODEN, M. E. L.<sup>3</sup>, ROWLAND, S.<sup>3</sup> 'Atypical size selection of school prawns, *Metapenaeus macleayi* by three recreational fishing gears in south eastern Australia'. *N. Z. J. Mar. Fresh. Res.*, 38, 755-766, 2004.

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CLARK, G.E.<sup>3</sup>, BURGE, G.K.<sup>3</sup>, C.M. TRIGGS 'Effects of soil nutrient levels on leaf purpling in *Hypericum*'. *New Zealand Journal of Crop and Horticultural Science*, 32, 201 - 207, 2004.

CLARK, G.E.<sup>3</sup>, BURGE, G.K.<sup>3</sup>, C.M. TRIGGS 'The effects of soil-less media, nutrition, and pH on tuber russetting in *Sandersonia aurantiaca*'. *New Zealand Journal of Crop and Horticultural Science*, 32, 131 - 138, 2004.

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CRAMPTON, P.<sup>3</sup>, DAVIS, P., LAY-LEE, R.<sup>2</sup>, RAYMONT, A.<sup>2</sup>, FORREST, C.<sup>3</sup>, STARFIELD, B.<sup>3</sup> 'Comparison of private for-profit with private community-governed not-for-profit primary care services in New Zealand'. *Journal of Health Services & Research Policy*, 9 Suppl 2, S2, 17-22, 2004.

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GILES L.C.<sup>3</sup>, METCALF P.A., GLONEK G.F.<sup>3</sup>, LUSZCZ M.A.<sup>3</sup>, ANDREWS G.R.<sup>3</sup> 'The effects of social networks on disability in older Australians'. *J Age & Health*, 16, 517-38, 2004.

- GRAHAM P.<sup>3</sup>, DAVIS P., BLAKELY T.<sup>3</sup>, SPORLE A., PEARCE N.<sup>3</sup>. 'Compression, Expansion or Dynamic Equilibrium? - The evolution of health expectancy in New Zealand. *Journal of Epidemiology and Community Health* 58:659-666, 2004.
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**(d) Books Edited**

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- DEW, K., DAVIS, P. *Health and Society in Aotearoa/New Zealand*. (Oxford University Press, Auckland) Second Edition, 308 pages, 2004.
- XIAO, Y.<sup>3</sup>, PUNT, A. E.<sup>3</sup>, MILLAR, R. B., QUINN II, T.J.<sup>3</sup> (EDITORS). *Models in Fisheries Research: GLMs, GAMs and GLMMs*. Amsterdam, Elsevier, 287 pages, 2004.

**(e) Conference Publications – full written papers, refereed**

- BUSSELL W.T.<sup>3</sup>, ENNIS I.L.<sup>3</sup>, PRINGLE G.J.<sup>3</sup>, PERRY F.A.<sup>3</sup>, TRIGGS C.M. 'Relationships between crown size at planting, yield and growth in strawberries'. *Proceedings of the Agronomy Society of New Zealand*, 2003, , 33, 9 - 12.
- CLARK, G.E.<sup>3</sup>, BURGE, G.K.<sup>3</sup>, MORGAN, E.<sup>3</sup>, C.M. TRIGGS 'Effects of Planting Date and Environment on the Cut Flower Production of *Santonina* 'Golden Lights''. *Proceedings 9th International Bulb Symposium, Niigata, Japan*, 2004.
- UMSTAETTER<sup>5</sup>, R., MEYER, R., DUPUIS<sup>3</sup>, R.J., VEITCH<sup>3</sup>, J., WOAN<sup>3</sup>, G., CHRISTENSEN<sup>3</sup>, N.L. 'Detecting gravitational radiation from neutron stars using a six-parameter adaptive MCMC method'. *Proceedings of the 24. International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt'04), Munich, Germany*, ?.

**(f) Scholarly Reviews and Comments**

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MILLAR, R. B. 'Book review'. Andrew and Francis, 2003, *The living reef, the ecology of New Zealand's rocky reefs*. Review (or comment) in *N. Z. J. Mar. Fresh. Res* 38, 380, 2004.

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**(g) Professional and Technical Reports**

ANDERSON, M.J. 'Modification of the model to assess ecosystem health using benthic communities'. *January 2004, prepared for Auckland Regional Council*. Auckland, UniServices, 13 pages, 2004.

BEGG, A.<sup>3</sup> & PFANNKUCH, M. 'The School Statistics Curriculum: Statistics and Probability Education Literature Review'. . Wellington, Ministry of Education, 44 pages, 2004.

CLARK, G.<sup>3</sup>, BURGE, G.<sup>3</sup>, MORGAN E.<sup>3</sup>, C.M. TRIGGS 'Tuber production and flower production studies of *Sandersonia x Gloriosa* hybrids in 2003-2004'. *Crop & Food Research Ltd, Confidential Report No. 1190*, 11 pages, 2004.

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FORD, R.B., ANDERSON, M.J., DAVISON, B.<sup>2</sup> 'Ecological monitoring of the Okura Estuary 2003-2004: Testing the continued application of regional models'. *June 2004, prepared for Auckland Regional Council*. Auckland, UniServices, 81 pages, 2004.

HARKER F.R.<sup>3</sup>, GUNSON F.A.<sup>3</sup>, TRIGGS C.M., JAEGER S.R.<sup>2</sup>, ROYLANCE M.J., AMOS R.<sup>3</sup>, JACKMAN R.<sup>3</sup>, REQUEJO C.<sup>3</sup>, ROXBURGH M.<sup>3</sup>, SUDO R.<sup>3</sup>, HENDERSON, W.<sup>3</sup>, DENTON, C.<sup>3</sup>. 'Quantifying Market Value for Taste'. *Report to ZESPRI Group Ltd, Hortresearch Client Report No. 13725, Contract No. 19421*. Auckland, , 127 pages, 2004.

JONKER, F.<sup>3</sup> & FERREIRA, S.M.<sup>3</sup> 'Can echolocation devices be used to define harbour use by Maui's dolphins.' DoC Science Internal Series 161: 1-21, 2004.

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RAYMONT, A.<sup>2</sup>, LAY-YEE, R.<sup>2</sup>, DAVIS, P.B., SCOTT, A.J. 'The National Primary Medical Care Survey. Report 1: Family Doctors - methodology and description of the activity of private GPs. Report to the NZ Ministry of Health, 96 pages, 2004.

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SCOTT, DAVID J. 'Analysis of pilot study data'. . , Unpublished, 3 pages, 2004.

TAYLOR, R.B.<sup>2</sup>, ANDERSON, M.J., USMAR, N.<sup>5</sup>, WILLIS, T.J.<sup>1</sup> 'Te Whanganui A Hei marine reserve fish monitoring 2003: Final Report'. August 2004, prepared for Hauraki Area Office, Department of Conservation, New Zealand . Auckland, UniServices, 39 pages, 2004.

**(I) Other Works**

ANDERSON, M.J. 'Kelp holdfasts - environmental sensors'. *Marsden Fund Newsletter*, No 29, October 2004.

BATES, D.<sup>3</sup>, CHAMBERS, J.<sup>3</sup>, DALAGAARD, P.<sup>3</sup>, GENTLEMAN, R.<sup>1</sup>, HORNIK, K.<sup>3</sup>, IACUS, S.<sup>3</sup>, IHAKA, R., LEISCH, F.<sup>3</sup>, LUMLEY, T.<sup>3</sup>, MACHLER, M.<sup>3</sup>, MURDOCH, D.<sup>3</sup>, MURRELL, P., PLUMMBER, M.<sup>3</sup>, RIPLEY, B.<sup>3</sup>, TEMPLE LANG, D.<sup>3</sup>, & TIERNEY, L.<sup>3</sup>, 2004. Versions 1.9.0, 1.9.1, 2.0.0, and 2.0.1 of the R System <http://www.cran.r-project.org>, 2004.

FEWSTER, R.M. 'Stochastic modelling of rat invasions among islands in the NZ archipelago', *AWIS (Association for Women in the Sciences) Newsletter*, December 2003.

MURRELL, P. The grid add-on package for R (version 2.0.1) <http://www.stat.auckland.ac.nz/~paul/grid/grid.html>, 2004.

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MURRELL, P., The graphicsQC add-on package for R (version 0.4) <http://www.stat.auckland.ac.nz/~paul/>, 2004.

PFANNKUCH, M., & HORRING, J.<sup>3</sup> 'Developing statistical thinking in a secondary school: A collaborative curriculum development'. Paper presented at the International Association of Statistics Education Roundtable Conference, Lund, Sweden (9 pages) 2004.

PFANNKUCH, M., BUDGETT, S., PARSONAGE, R., & HORRING, J.<sup>3</sup> 'Comparison of data plots: the need to build a pedagogical framework'. 10th International Congress on Mathematics Education, Copenhagen (invited paper, 8 pages), <http://www.icme-organisers.dk/tsg11/>, 2004.

YEE, T. W. The VGAM package (version 0.5-24), <http://www.stat.auckland.ac.nz/~yee/VGAM>, 2004.

**MSc by thesis completed**

DAVY, Marcus	Bayes analysis for microarrays
TRAN, Thanh	Modelling for electricity price derivatives

**PhD completed**

JIANG, Yannan	Semiparametric Maximum Likelihood for Multiphase Response-Selective and Missing Data Problems
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**List of New and Unreported Research Grants**

ANDERSON, Marti & R.B. Ford	Auckland Regional Council (Contract Research) \$152,000
ANDERSON, Marti & R.B. Ford	Auckland Regional Council (Contract Research) \$283,000
ANDERSON, Marti, S.D.Connel & B.M.Gillanders	Discovery Project, Australian Research Council University of Adelaide \$180,000
ANDERSON, Marti & R.B. Ford	Auckland Regional Council (Contract Research) \$266,400
BLACK, Mik	University of Auckland New Staff Research \$12,500 Associate on HRC \$1,000,000 Associate on HRC 800,000 Associate on FRST \$75,000 Associate on NERF \$5,200,000 Associate on NERF \$19,200,000 Associate on HRC \$4,000,000
CUNLIFFE, Rachel	The University of Auckland \$7,500
DAVIS, Peter and SCOTT, Alastair	Marsden Fund, \$198,000 pa

FEWSTER, Rachel	FRST, \$500,000
MEYER, Renate	Early Career Research Excellence Award \$30,000 pa
MILLAR, Russell	DFG, Germany \$4,000
PFANNKUCH, Maxine	University of Oslo \$6,000
SCOTT, David	Ministry of Education, \$17,700 (Contract Research)
TRIGGS, Chris	The University of Auckland 4,000
WANG, Yong	Associate on FRST \$19,200,000
	University of Auckland Research Committee \$5500

## Student Research

### PhD Students

AFIMEIMOUNGA, Heti	Modelling and optimal control of queueing networks
BERG, Andreas	Bayesian analysis of financial time series
CLOETE, Nicoleen	Markov chain Monte Carlo methods for population genetics models
DONOVAN, Carl	Non linear multivariate methods in ecology
GENTILES, Dudley	Cardiovascular risk factors in Maori people
GRIBBEN, Paul	Biology and distribution of geoducks
HELU, Joe	Stock assessment models of South Pacific tuna
HIROSE, Yuichi	Semi parametric efficiency bounds
JIANG, Yannan	Semiparametric Maximum Likelihood for Multiphase Response-Selective and Missing Data Problems
LANGLOIS, Tim	Effects of marine reserves and proximity of rocky reefs on soft sediment macro invertebrates
LAW, Derek	New methodologies for three dimensional representations of statistical data
LEE, Arier	Random effect models for ordinal data
LEADER, Debbie	Multivariate Analysis of Bioinformatic Data
MACKENZIE, Monique	Non-linear generalized mixed models: a regression spline approach
MAITRA, Alokanda	Analysis of survey data. Interviewer effects in sample surveys
MILLER, Steven	Stochastic modelling of a rat invasions among islands in the New Zealand archipelago
PAWLEY, Matt	Geostatistical methods in ecological sampling
REILLY, James	Imputation and data fusion
ROEVER, Christian	Bayesian strategies for astrophysical data analysis
RUSSELL, James	Invasion ecology of rats on NZ islands
SAUNDERS, Justine	Modelling the multivariate response of kelp holdfast assemblages to environmental change
STEWART, Wayne	Bayesian modeling of fisheries
SU, Ji Zi	Internet traffic: analysis, modeling and control.
SUNBORN-MACDONALD, Gerhard	Cardiovascular disease risk factors in Pacific people
TRAN, Thomas	The Hyperbolic Distribution and its applications
TSO, Jennifer	The Relationship between Stroke Occurrence and Solar, Planetary, and Interplanetary Parameters
UMSTAETTER, Richard	Bayesian strategies for astrophysical data analysis
WELCH, David	Bayesian Estimation of host and FIV genealogies of cat populations in New Zealand.

### MSc Thesis

WILLCOX, Ann Roberta	Statistical Analysis in Sport: How Do You Win a Netball Game
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### Postdoctoral Fellow

Dr Richard Ford	Monitoring soft-sediment fauna of estuaries in the Auckland region
Dr Sam Ferreira	A stochastic modelling framework for metapopulation dynamics with conservation applications.

### Research Fellows

Andrew Sporle, Stephen McTaggart

### Medium-term Visitors to the Department

Dr Jonathan Reeves	University of New South Wales, Australia, 20 Sep 2003 - 16 Feb 2004
A/Prof. Masayuki Jimichi	Kwansei Gakuin University, Japan, 9 Sep 2003 - 1 Sep 2004

Professor Hal Caswell & Dr Christine Hunter Dr Jeong Hwan Ko	Woods Hole Oceanographic Institute, USA, 15 December 2003-1 March 2004 Andong National University South Korea, 23 January 2004 – 10 January 2005
Professor John Chambers Dr Gerald Cheang Hock Lye Dr Claude Belisle Dr John Brewster	Lucent Bell Laboratories, USA, 18 February – 30 March 2004 Nanyang Technological University, Singapore, 11 May – 16 June 2004 Laval University, Canada, 1 July – 12 December 2004 University of Manitoba, Canada, 1 October 2004 -31 March 2005

### Invited Conference Papers and Workshops

#### *Marti Anderson*

- 2004. Sep 2. 'Multivariate tools for ecological monitoring and environmental impact assessment'. Invited Seminar, Centre for Ecology and Evolution, Department of Biology, University of Oslo, Norway.
- 2004. Aug 2. 'Multivariate techniques for monitoring, environmental impact assessment and ecological analysis'. Ecological Society of America Annual Meeting, 1-6 August 2004, Portland, Oregon, USA.
- 2004. Jul 2. 'Multivariate models: general strategies for monitoring and environmental impact assessment'. Invited seminar, University of Western Australia, Perth, Australia.

#### *Mik Black*

- NZSBMB regional scientific meeting: Microarrays, Otago Genomics Facility Microarray Meeting.

#### *Rachel Cunliffe*

- 'IdolBlog.com', Creative Entrepreneurs Seminar, Auckland Chamber of Commerce, September 2004.
- 'Stage I Introductory Statistics Courses: An All One-Team Approach', Seminar: Higher Education Research and Development Society of Australasia, June 2004.

#### *Alan Lee*

- Invited speaker at International Biometrics Conference, Cairns, July 12-16
- Invited speaker at Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6

#### *Rachel Fewster*

- Invited speaker at the International Biometrics Conference, Cairns, July 2004.

#### *Russell Millar*

- Invited visitor to the Conservation Technology Unit, of New South Wales Fisheries, Coffs Harbour, joint with Southern Cross University and University of New England.
- Invited visitor to the University of Oslo, Sept 2004.

#### *Paul Murrell*

- Invited keynote speaker at useR!2004 (Vienna), "Grid Graphics and Programming"

#### *Maxine Pfannkuch*

- Invited speaker, International Association of Statistical Education Roundtable Conference, Lund, Sweden, June
- Invited speaker, 10th International Congress in Mathematics Education, Copenhagen, July

#### *Renate Meyer*

- Invited Speaker, Workshop on Survival Methods and Models, Uni. of Bielefeld, Germany, June 24-26

#### *Alastair Scott*

- Invited speaker at Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6
- Invited speaker at the International Biometrics Conference, Cairns, July 2004.

#### *David Scott*

- Invited speaker at Workshop "Design and analysis of infectious diseases studies" in Oberwolfach, Germany

#### *Chris Wild*

- Opening Plenary Speaker, Royal Statistical Society 2004, Manchester, September

- Invited speaker at Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6
- Invited Panellist, International Statistical Institute Special Conference, Daejeon, South Korea, August
- Invited speaker at Joint Annual Meeting of Japanese Statistical Societies, Hanamaki, Japan, September

*Thomas Yee*

- Invited early in 2004 to give a workshop at The Institute of Statistical Mathematics, Tokyo

### **Seminars by Visitors**

2/2/2004 Professor Satish Iyengar (Mathematics and Statistics, Canterbury)

*Title:* Diffusion Models for Neural Activity

3/2/2004 Dr Ken Brewer (Australian National University)

*Title:* Combined Survey Inference: Compromise or Consummation?

5/2/2004 Dr Hal Caswell (Biology Dept. Woods Hole Oceanographic Institution, USA and NZIMA)

*Title:* Stochastic demography of a threatened floodplain plant

11/2/2004 Dr Susan Pitts (Cambridge)

*Title:* Estimation for risk models

12/2/2004 Dr Jonathan Reeves (University of New South Wales)

*Title:* Structural Breaks in Realized Volatility

24/2/2004 Dr Mark Clements (Australian National University)

*Title:* Prediction of Lung Cancer Mortality using Generalized Additive Models and Bayesian Age-Period-Cohort Models

18/2/2004 Dr Herve Moulin (Rice University)

*Title:* The random allocation of indivisible units: an axiomatic approach

18/2/2004 Dr Antonio Terlizzi (University of Lecce)

*Title:* Scales of spatial variation, environmental impacts and experimental designs. An overview from Mediterranean rocky subtidal

19/2/2004 Dr Christine Hunter (Woods Hole Oceanographic Institution)

*Title:* Simplifying construction and analysis of multi-regional population models using the vec-permutation matrix

3/3/2004 Dr John Chambers (Bell Labs)

*Title:* Current Research in Statistical Computing – Functions and Objects

10/3/2004 Dr John Chambers (Bell Labs)

*Title:* Current Research in Statistical Computing – Seven stages of programming S

10/3/2004 Dr John Chambers (Bell Labs)

*Title:* Current Research in Statistical Computing – Classes and methods

10/3/2004 Dr John Chambers (Bell Labs)

*Title:* Current Research in Statistical Computing – Data Frames

10/3/2004 Dr John Chambers (Bell Labs)

*Title:* Current Research in Statistical Computing – Intersystem Interfaces

17/3/2004 Dr Mark Maunder (Inter-American Tropical Tuna Commission, La Jolla, USA)

*Title:* Ecological Modeling: Information and Uncertainty

18/3/2004 Dr Michael Bulmer (University of Queensland)

*Title:* Virtual Worlds for Teaching Mathematics and Statistics

23/3/2004 Professor Colin Aitken (University of Edinburgh)

*Title:* Evaluation of forensic trace evidence in the form of multivariate data

- 24/3/2004 Dr Anna Bogolmonaia (Rice University)  
*Title:* A new solution to the random assignment problem
- 21/4/2004 Dr Ray Hoare (Hoare Reseach Software, Hamilton)  
*Title:* Presentation of Statistica software package
- 2/6/2004 Dr Gerald Cheang (Nanyang Technological University, Singapore)  
*Title:* Pricing Exchange Options with Discontinuous Stock Prices
- 5/7/2004 Dr Jessica Utts (University of California)  
*Title:* Investigating Psychic Phenomena with Statistics
- 5/7/2004 Dr Jessica Utts (University of California)  
*Title:* Principles and Practices for Teaching Statistics
- 14/10/2004 Dr Steven Butt (*Western Michigan University*)  
*Title:* Investigation of the Effect of Nursing activities and the built hospital environment on nurse health and productivity
- 26/11/2004 Dr John F Brewster (University of Manitoba)  
*Title:* Post-Data Pivotal Inference in the Balanced One-Way Random Effects Model

#### **Seminars by Profesorial Candidates**

- 4/11/2004 Professor Keith Worsley (McGill University, Montreal)  
*Title:* Correlation random fields, brain connectivity, and astrophysics
- 4/11/2004 Associate Professor Alan Lee (Statistics Department, Auckland University)  
*Title:* Case-Control, Efficiency and Semi-parametric Regression
- 4/11/2004 Associate Professor YouGan Wang (National University of Singapore)  
*Title:* Parameter Estimation for Irregularly Timed Repeated Measures
- 5/11/2004 Associate Professor Chris Triggs (Statistics Department, Auckland University)  
*Title:* A Model for the Analysis of Mixed DNA Profiles

#### **V. STAFF LEAVE AND CONFERENCES**

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|----------------|---|
| Marti Anderson | Ecological Society of America Annual Meeting, 1-6 August 2004, Portland, OR, USA  |
| Mik Black      | International Conference on Bioinformatics<br>NZSBMB regional scientific meeting: Microarrays<br>Otago Genomics Facility Microarray Meeting.<br>BioInfoSummer   |
| Rachel Fewster | International Biometrics Society Conference, Cairns, July 12-16   |
| Richard Ford   | ECSA Rouen, 2004<br>Benthic Ecology Meeting, Mobile Alabama   |
| Alan Lee       | International Biometrics Society Conference, Cairns, July 12-16<br>Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6<br>Joint Statistical Meetings, Toronto, August 9-15<br>COMPSTAT 2004, 16th Symposium of IASC, Prague, August 23-27, 2004 |
| Brian McArdle  | International Biometrics Society Conference, Cairns, July 12-16   |

Renate Meyer	Int. Workshop on Bayesian Inference and Maximum Entropy, Munich, July 25-30, 04 Gravitational Wave Data Analysis Workshop, December 8, Wisconsin Workshop on Survival Methods and Models, Uni Bielefeld, Germany, June 24-26, 04 LIGO Scientific Collaboration Meeting, Baton Rouge, March 04 Workshop on Survival Methods and Models, Uni. of Bielefeld, Germany, June 24-26
Russell Millar	International Biometrics Society Conference, Cairns, July 12-16
Paul Murrell	UseR! 2004 (Vienna)
Maxine Pfannkuch	International Association of Statistical Education Roundtable Conference, Lund, Sweden, June 10th International Congress in Mathematics Education, Copenhagen, July
Geoffrey Pritchard	Control and Pricing in Communication and Power Networks (invited participant) Bernoulli Society World Congress Tenth International Conference on Stochastic Programming National Conference of the OR Society of NZ Sabbatical leave taken Semester 2, 2004 (France / USA)
Alastair Scott	New Zealand Statistical Association, July, Wellington International Biometrics Society Conference, Cairns, July 12-16 Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6 Joint Statistical Meetings, Toronto, August 9-15
David Scott	Australian Statistical Conference and International Biometrics Society Conference, Cairns, July 12-16 Design and analysis of infectious disease studies
Chris Triggs	Australia and New Zealand Forensic Science Society, 29 March - 2 April International Biometrics Society, Cairns, July 12-16. Ames International Symposium on Nutritional Genomics, Davis CA, October 22-25.
Chris Wild	Field's Institute Workshop on Statistical Methods for Missing Data, Toronto, August 5-6 Joint Statistical Meetings, Toronto, August 9-15 International Statistical Institute Special Conference, Daejeon, South Korea, August Japan Statistical Society 2004, Hanamaki, Japan, September Royal Statistical Society 2004, Manchester, September
Yong Yang	Structure and Uncertainty: statistical modelling, stochastic systems and Bayesian computation, Peter Green Workshop, Hamilton, 1 April
Thomas Yee	The Institute of Statistical Mathematics, Tokyo COMPSTAT 2004, 16th Symposium of IASC, Prague, August 23-27, 2004 GLMs and GAMs in Ecology, Switzerland, August Leave without pay July 2003 till July 2004. Visiting Associate Professor, National University of Singapore
Ilze Ziedins	Invited participant in Program on Queuing theory and Teletraffic Theory, Institut Mittag-Leffler, The Royal Swedish Academy of Sciences, Stockholm. 20 Nov - 15 Dec 2004. Invited participant in Institute of Mathematics and its Applications Thematic Year on Probability and Statistics in Complex Systems: Genomics, Networks and Financial Engineering, Minnesota, March 2004 (including Workshop on Control and Pricing in Communication and Power Networks). Invited participant in Workshop on Spatial Stochastic Modelling with Applications to Communications, International Centre for Mathematical Sciences, Edinburgh, June 2004. Invited participant in Workshop on Optimization and Transportation Scheduling, The Chateau, September 2004. NZNOG-04, 29-31 January, University of Waikato



## VI COMMUNITY SERVICES

### Highlights

Most service by the Department is in formal roles listed under subheadings below. The following is not covered in that way.

David Scott served on the CPI Revision Advisory Committee established by Statistics New Zealand for a major review of the Cost Price Index.

Maxine Pfannkuch serves on the Ministry of Education Mathematics Curriculum Reference Group as the representative of the New Zealand Statistical Association Education and is a Writer for the 2006 new school statistics curriculum. She gave an invited lecture on Statistical Literacy to the , Data Management and Analysis Division of the Ministry of Education and an invited lecture on Statistics Education Literature Review to the Mathematics Curriculum Reference Group, Wellington. She also gave a half-day workshop to Auckland teachers and pre-service teachers on developing students' statistical thinking

Our annual "Year 13 Statistics & Modelling Workshop" (organised by Matt Regan, Rachel Cunliffe and Ross Parsonage) continues to grow, drawing 125 secondary maths teachers to the Tamaki Campus for Tuesday 16 November with one from as far away as Wellington. Materials from this series of workshops is highlighted and recommended to teachers on two Ministry of Education websites. As an extension of this work we provided a website for the Auckland Mathematical Association (AMA) and a discussion forum for AMA members and other mathematics teachers. Rachel Cunliffe and Stephen Cope also built a web-survey generator to enable teachers to construct their own online surveys without need of IT skills. (This will also have many other uses which we are exploring with interested parties within the university.)

Negotiations were begun to obtain funding from Statistics New Zealand and the Ministry of Education to help support the running of an improved version of our 2003 CensusAtSchool project towards the end of 2005. This will be timely in the run up to the 2006 census.

In 2003 members of the Department continued to offer statistical consulting services to members of the University and the wider community. Graduate students from other Departments commonly obtain advice from members of the Statistics Department. Work was undertaken with the Departments of Accounting, Community Health, Geography, Medicine (Clinical Trials Research Unit), Paediatrics, and Psychology, and the Schools of Biological Science, Engineering, and Environmental and Marine Science. Other clients included the Department of Conservation, Cancer Research, Crown Research Institutes, and several commercial clients contracted through UniServices.

### Editorial, Professional Society Officers, and Conference Organisation

*Marti Anderson*

Editorial Board, *Ecology Letters*.

Editorial Board, *Australian & New Zealand Journal of Statistics*

*Alan Lee*

Associate Editor, *Australian & New Zealand Journal of Statistics*.

*Renate Meyer*

Marsden Fund Mathematical and Information Sciences Panel

*Russell Millar*

Applications Editor, *Australian and New Zealand Journal of Statistics*

Editorial Board, *New Zealand Journal of Marine and Fisheries Research*

Editorial Board, *Canadian Journal of Fisheries and Aquatic Sciences*

*Arden Miller*

Associate Editor, *Australian & New Zealand Journal of Statistics*.

*Paul Murrell*

Assistant Editor for Statistical Graphics Section of ASA

Chair-Elect, Statistical Graphics Section of American Statistical Association  
Editorial Board, *R News*  
Associate Editor, *Computational Statistics*

*Maxine Pfannkuch*

Associate Editor, *Statistics Education Research Journal*  
IASE National Correspondent for New Zealand  
Topic Convenor for 7<sup>th</sup> International Conference on the Teaching of Statistics, Brazil 2006  
Topic Group Committee, 10<sup>th</sup> International Conference on Mathematics education  
New Zealand Statistical Association Education Committee  
SRTL-4 Forum Convenor and Advisory Board member. (SRTL = Statistical Reasoning, Thinking, and Literacy)

*David Scott*

Convenor of the Organising Committee for Australian Statistical Conference and New Zealand Statistical Association 2006

*Chris Triggs*

Associate Editor, *Biometrics*  
Review Panel for the Statistical Consulting Service, University of Melbourne, November 2004.  
Review Panel, Taste Zespri Science review, Zespri Innovation board, October - December 2004.

*Chris Wild*

President of the International Association for Statistics Education (IASE)  
Council Member, International Statistical Institute  
Editor, *IASE Review*  
Associate Editor, *International Statistical Review*  
Associate Editor, *Statistics Education Research Journal*  
ISI 55 Programme Co-ordinating Committee for Sydney 2005  
ISI 55 IASE Programme Chair for Sydney 2005  
ISI55 IASS (International Association for Survey Sampling) Programme Committee for Sydney 2005  
Programme Chair for IASS Satellite Conference on Complex Sampling, Retrospective Sampling and Missing Data, Auckland 2005  
Advisory Committee, 4th International Research Forum on Statistical Reasoning, Thinking, and Literacy, 2005

*Thomas Yee*

Associate-Editor, *Computational Statistics*  
Invited to organize and contribute at the Asian Regional Section of the International Association for Statistical Computing (IASC), a Section of the International Statistical Institute (ISI), at its 5th Conference in Hong Kong, 16-17 December, 2005.

*Ilze Ziedins*

Associate Editor, *Stochastic Models*  
Associate Editor, *Australian and New Zealand Journal of Statistics*  
East Asia and Pacific Regional Committee of the Bernoulli Society  
Organizer invited paper session IMP18 "Stochastic Networks" for ISI 55 in 2005

In addition, the following staff reported serving as referees for the indicated publications (incomplete list):

Marti Anderson	Ecology, Marine Biology, Limnology & Oceanography, Journal of Plankton Research, Estuarine Coastal and Shelf Science, Ecology Letters, Marine Ecology Progress Series, Ecological and Environmental Statistics, Journal of Statistical Planning and Inference, Journal of Experimental Marine Biology and Ecology
Mik Black	Applied Bioinformatics, Bioinformatics, Biometrics, Health Economics, Journal of Agricultural Biological and Environmental Statistics, Journal of the American Statistical Association, Journal of the Royal Statistical Society Series B, Plant Cell.
Rachel Fewster	JASA and Biometrics.
Brian McArdle	Ecology, Royal Society (UK) - e-Pubs: Biology Letters NZ, Journal of Marine and Freshwater Research

Patricia Metcalf	Diabetes Care, European Journal of Clinical Nutrition, New Zealand Medical Journal, Age & Aging, International Journal of Social Science and Medicine
Renate Meyer:	ANZJS, CJFAS, Ecology, Interface, Physica A and Journal of Computational Statistics
Russell Millar:	Refereed 12 manuscripts for various fisheries and statistical journals.
Arden Miller:	Technometrics, Journal of Quality Technology, and Quality Technology and Quantitative Management.
Maxine Pfannkuch.	Mathematics Education Research Journal, Journal of Statistics Education, Statistics Education Research Journal, International Association of Statistics Education Round Conference, Canadian Journal of Science Mathematics and Technology Education, 10th International Congress of Mathematics Education, Mathematics Education Research Group of Australasia Proceedings
Geoff Pritchard:	Probability Theory and Related Fields, Journal of Applied Probability, Australian and NZ Journal of Statistics, NZ Journal of Mathematics
David Scott:	New Zealand Journal of Marine and Fresh Water Research and Computational Statistics.
Chris Triggs:	Journal of Forensic Science, Nucleic Acids Research and Journal of Royal Society: Series B, Biological Sciences
Thomas Yee:	The American Statistician, Computational Statistics, Ecology Letters, Biostatistics, Ecological Modelling.  Book review of "Linear Models with R", 2005, Chapman & Hall/CRC, by Julian J. Faraway. To appear in the last R news letter
Ilze Ziedins:	Journal of Applied Probability, Queueing Systems

## VII OTHER MATTERS

### Staffing changes

Alan Lee and Chris Triggs were appointed to Chairs in the Department after an international search. The Department now has 3 Professors.

Stephen Cope joined the department as the web systems programmer.

Salomon Ferreira joined the Department as a Post-doctoral Fellow

Promotions were obtained by Marti Anderson, Mik Black, Rachel Fewster, Rachel Cunliffe and Arden Millar. Brian McArdle, Geoff Pritchard and Maxine Pfannkuch undertook successful Research and Study Leaves.

Thomas Yee took leave-without-pay from July 2003 at the National University of Singapore until June 2004.

### Administration

Many people contributed to the smooth running of the Department in 2004. Special thanks are due to all our administrative and computer staff. The following staff provided valuable service to the Department in specific areas:

- HoD Chris Wild
- Department Manager Sharon Walker
- Tamaki Head Chris Triggs
- Director of Consulting Service Alan Lee

### Committee Convenors

- Academic Chris Triggs
- Consulting Alan Lee

- Graduate David Scott
- IT Ross Ihaka
- Library Ilze Ziedins
- Research Russell Millar
- Staff-Student Joss Cumming
- Student life Rachel Fewster
- Teaching Development Ross Parsonage

*Year-level coordination*

- Stage 1 Matt Regan
- Stage 2 Mike Forster
- Stage 3 Chris Triggs

*Postgraduate*

- Graduate Officers
  - Masters & Hons David Scott
  - PGDipSci Brian McArdle
  - PhD Renate Meyer
- Graduate Advocate Rachel Fewster

*Operations Research Programme* Ilze Ziedins

*Research Group Leaders*

- Bayesian Statistics Renate Meyer
- Statistical Ecology and Bioinformatics Marti Anderson
- Industrial Statistics Arden Miller
- Medical Statistics Patricia Metcalf
- Operations Research & Stochastic Processes Ilze Ziedins
- Statistical Computing Ross Ihaka
- Statistics Education Matt Regan

*Other*

- Maori and Pasifika Wiremu Solomon, Susan Wingfield
- Timetable Matt Regan
- Undergraduate Enrolment Christine Miller
- Library Ilze Ziedins and Thomas Yee
- Seminars Arden Miller and Brian McArdle
- Open Day Coordinator Mik Black
- Tamaki Demonstrators Ross Parsonage
- Databases Paul Murrell
- CECIL Liaison Mat Regan
- Coordinator BTech (IM) David Scott
- Women in Science and Engineering Marti Anderson

*Departmental Representative or Service on Faculty Committees*

- Fac. Science Academic Geoffrey Pritchard/ Chris Triggs
- Fac. Science IT Managers Werner Schmidt
- Fac. Science IT Academic Paul Murrell
- Fac. Science EO Wiremu Solomon
- Fac. Science Maori Responsiveness Ross Ihaka
- Fac. Science Maori and Pacifica in Sci Susan Wingfield
- Fac. Science Library Ilze Ziedins
- Fac. Science Staffing Ilze Ziedins, Chris Triggs, Alan Lee
- Fac. Med & Health Sci. Staffing Chris Triggs
- Faculty of Bus. And Econ. Chris Wild
- Faculty of Arts Geoffrey Pritchard
- Faculty of Arts BUGS Maxine Pfannkuch

*Marsden Fund Mirror Panels* Rachel Fewster, Marti Anderson

*Women in Science and Engineering* Marti Anderson

*Liaison with Auckland Mathematical Association* Matt Regan

Additionally, Chris Triggs served as Associate Dean of Science (Tamaki), Alastair Scott served as a member of the FRST Post-doctoral Reference Group and on the Executive of the Centre for Health Services Research and Policy. Chris Wild served on the Board of Studies for General Education (Professorial rep), the Academic Heads Advisory Group, the Administration Review Committee, and was an HOD mentor.

**Uniservices**

<b>Year</b>	<b>Revenue</b>	<b>Increase</b>	<b>Billings</b>	<b>Increase</b>
2001	\$41,642		\$52,549	
2002	\$103,841	149%	\$162,525	209%
2003	\$247,747	139%	\$299,805	84%
2004	\$546,941	120%	\$593,182	98%

**VII OVERALL COMMENTS ON PROGRESS WITHIN THE DEPARTMENT**

This was a year in which student numbers hit an all-time high with the student-staff ratio going to 27 to 1 (30 to 1 on some Planning Office documents) and the contribution rate approached 60%. We have been very pleased by the way the Faculty is moving to address this and related growing pains with, for example, the advertising and filling of two Chairs in 2004 and some new positions in the 2005 budget. We are looking forward to the opportunity the new positions provide to advance some of our strategic priorities in areas such as survey sampling and social statistics, molecular technologies, statistical computing and data mining, business, ecology, and medical statistics.

Research productivity was up. Uniservices revenues were up by 120% continuing a pattern of extremely strong growth in that area with Marti Anderson being the greatest contributor by a wide margin. There are innovative approaches being developed in teaching (particularly around the use of new technology) and programmes. The Annual Reports of several years ago complained regularly about systems governing computing resources. The new policies and systems are working smoothly and have removed this as a headache area. Staff morale is good and we are looking forward to the future optimistically. The financial health of the Department continues to depend on the continuation of our role as the providers of Statistics service teaching across the University. We take this role very seriously, and continuously strive to improve the quality of our courses as evidenced by our 2003 National Teaching Award. Our biggest problem is lack of space on the City campus and the mismatch between where our work is and where many staff are accommodated leading to much downtime in travelling.

This is a great Department in which to be HOD. I am very grateful to all staff in Statistics and the team at the Faculty of Science for the excellent support they provide.

Chris Wild

HoD, Department of Statistics