Centre for Statistical and Survey Methodology

Director: Prof David Steel

Activities

CSSM is a research strength of the University which undertakes:

• fundamental research
• industry-focussed and contract research
• major consulting projects
• professional education and training.
People

- 10 academic staff on continuing appointments: Clark, Chambers, Davy, Griffiths, Gulati, Lin, Porter, Russell, Steel, Wand
- 4 Professors, with strong international experience and profile including 2 research only - Chambers, Wand - elected fellows of ASA, editorial positions on A* journals, highly cited
- 4 Research Fellows, funded by grants
- 20+ research students (largest group in Australia)

- 3 new position being recruited
  - Statistical consulting service - full time leader
  - Deputy Director - focussing on external relationships
  - Clinical trial and Medical Statistics to work with IHMRI
CSSM undertakes world class research and consulting in

- survey design, estimation and analysis
- complex data analysis and modelling
- experimental design and analysis
- data mining
- spatial and small area statistics
- statistics in quality
- privacy and confidentiality
- combining data
- statistical education

Partnerships

CSSM has a strong track record of developing long-term collaborative partnerships with government agencies and industry.

Major Ongoing Partnerships

- Australian Bureau of Statistics - funds Prof Chambers
- NZ Ministry of Health - $100k p.a.
Other Strong Relationship

- NSW Health
- Statistics NZ
- NEWSPOLL
- Australian Institute of Health and Welfare
- CSIRO

Many other research and consulting contracts

International Relationships

- Centre for Census and Survey Research - Manchester
- Southampton Statistical Science Research Institute
- Department of Statistics, Texas A&M
- UK Office for National Statistics
- US Bureau of Labor Statistics
- University of Pisa
- Fred Hutchinson Cancer Research Center, Seattle
Internationally Competitive Areas of Research

- statistical design - survey and experimental design;
- analysis of data from complex populations - survey, longitudinal, spatial, aggregated data and combining data;
- statistical modelling - semi-parametric and nonparametric methods, time series, quasi-likelihood, multi-level modelling, and estimating equations;
- data quality and survey methods - particularly telephone, household and Internet surveys;
- statistical confidentiality.

Research Grants

Track record of obtaining competitive research grants from the ARC, NHMRC and international funding bodies.

ARC-Discovery

- Statistical Inference for Probability-Linked Longitudinal Data*.
- Generalised Linear Mixed Models: Theory, Methods and New Areas of Application*.
- Statistical Methods for Flow Cytometric Data*.
- Efficient Design for Generalized Linear Models*.
- Maximum Likelihood Inference for Aggregate Data.
• A General Solution to the Modifiable Area Unit Problem.

ARC-Linkage

• Handling Missing Data in Complex Household Surveys*.
• New methods for small group analysis from sample surveys*.
• Seasonal Adjustment Using Disaggregated Short Time Span Data.
• Measuring Interviewer Effects in Household Surveys.
• Estimation and Inference for Household Surveys.
ARC- International Linkage

- The role of households, neighbourhoods and networks in social statistics - with University of Manchester*
- Analysis of Survey, Census and Aggregate Data- with Southampton and St Andrews.

NHMRC

- Development and evaluation of XyrisSoftware computer assisted survey technology as an adjunct to the professional consultation (led by Linda Tapsell).
- Learning how to age well from Australian Longitudinal Studies of Ageing (led by Kaarin Anstey, ANU- $2m project)*.
- DietAdvice a new innovation for dietitian in clinical practice (led by Linda Tapsell)*.
Other

- Sampling for Subpopulations in Household Surveys with Application to Maori and Pacific Sampling* (Statistics NZ).
- Analysing Linked Data* (Statistics NZ).

Applied Statistics Education and Research Collaboration

UoW is leader in major CASR grant ($940k) establishing collaboration between statistics groups at Wollongong, Newcastle and Western Sydney.

It will:

- jointly develop and deliver subjects and courses;
- form a graduate program to improve the research environment for Higher Degree Research students, through shared seminars, training in research methods, workshops and supervision;
• improve research at each institution by operating as a research centre, with shared seminar programs, staff development, workshops and mentoring;
• enable increased consulting and training by creating a larger pool of staff and skills available for industry.

Other Features

Good flow of excellent international visitors

Fellows research meetings - 3 times a year meetings of statistical researchers held at Goulburn - invitation only
The Future

• Continue to produce good research through the various major projects underway
• Focus on existing relationships - national & international
• Selective increase in research relationships
• Planning for keeping research grants flowing (meeting 11 August)
• Formalisation of education in advanced statistical methods - Professional Doctorate
• Recruitment of research students to maintain current level
• Expansion of activity arising from 3 new positions
  
  • Internal consulting
  • External relationships
  • IHMRI - clinical trials & medical statistics
• Involvement in National Statistical System coordinated by ABS
• Feelers from several groups from other universities interested in developing high profile centres in quantitative social research using CSSM as methodological centre
• Continue to create opportunities to recruit good staff