Random and Personal Thoughts on Statistics in Academia

G. Alastair Young

Department of Mathematics
Imperial College London

LTCC, January 2010

Overview

Overview

- Personalistic view of state of statistics in academia, in 2010 climate.

Overview

- Personalistic view of state of statistics in academia, in 2010 climate.
- Describe opportunities and challenges for those embarking on academic career in statistics.

Overview

- Personalistic view of state of statistics in academia, in 2010 climate.
- Describe opportunities and challenges for those embarking on academic career in statistics.
- Say something about what it's like, its rewards and challenges.

Disclaimer

Personal, partial, anecdotal and unstructured/haphazard.

Disclaimer

Personal, partial, anecdotal and unstructured/haphazard.

Considers UK academic life, permanent positions within mathematics/statistics groups.

AY CV

Own path:

- Degree in Mathematics and Statistics, University of Edinburgh.
- Diploma in Mathematical Statistics, University of Cambridge.
- Ph.D., 'Data-based Statistical Methods', Statistical Laboratory, University of Cambridge.
- JRF, Christ's College, Cambridge.
- Assistant Lecturer, Lecturer, Reader, Statistical Laboratory, University of Cambridge.
- Professor of Statistics, Imperial College.

Demography

2009 survey for Committee of Professors of Statistics shows:

Demography

2009 survey for Committee of Professors of Statistics shows:

- About 655 full-time equivalent academic staff employed in UK universities, around 490 of them male. [Broadly, constant over last few years].

Demography

2009 survey for Committee of Professors of Statistics shows:

- About 655 full-time equivalent academic staff employed in UK universities, around 490 of them male. [Broadly, constant over last few years].
- Of these, rough figures at different levels are 160 Professor (18 female), 125 Senior Lecturer/Reader (34 female), 225 lecturer (57 female) and 145 (temporary) Research Assistant/Fellow (56 female).

Demography

2009 survey for Committee of Professors of Statistics shows:

- About 655 full-time equivalent academic staff employed in UK universities, around 490 of them male. [Broadly, constant over last few years].
- Of these, rough figures at different levels are 160 Professor (18 female), 125 Senior Lecturer/Reader (34 female), 225 lecturer (57 female) and 145 (temporary) Research Assistant/Fellow (56 female).
- So, 165/655 full time staff are female. Of Ph.D. students completing in 2008, 34/62 were female.

Demography

2009 survey for Committee of Professors of Statistics shows:

- About 655 full-time equivalent academic staff employed in UK universities, around 490 of them male. [Broadly, constant over last few years].
- Of these, rough figures at different levels are 160 Professor (18 female), 125 Senior Lecturer/Reader (34 female), 225 lecturer (57 female) and 145 (temporary) Research Assistant/Fellow (56 female).
- So, 165/655 full time staff are female. Of Ph.D. students completing in 2008, 34/62 were female.
- 200 are aged 30-39, with 140 aged 50-59 and 54 over 60.

Demography

2009 survey for Committee of Professors of Statistics shows:

- About 655 full-time equivalent academic staff employed in UK universities, around 490 of them male. [Broadly, constant over last few years].
- Of these, rough figures at different levels are 160 Professor (18 female), 125 Senior Lecturer/Reader (34 female), 225 lecturer (57 female) and 145 (temporary) Research Assistant/Fellow (56 female).
- So, 165/655 full time staff are female. Of Ph.D. students completing in 2008, 34/62 were female.
- 200 are aged 30-39, with 140 aged 50-59 and 54 over 60.
- RAE2008: 388.78FTE academic staff submitted to UOA22 'Statistics and Operational Research'.

International Review of Mathematics, 2004

Commenting on the health of UK academic mathematics:

'In particular, the area of statistics has outstanding scientists in the 50-and-above age group, but has experienced and experiences serious difficulty recruiting young talented statisticians. There is a serious concern that now the UK is not producing a sufficient number of Ph.D. graduates in statistics to satisfy the demand from industry and at the same time to maintain the level of excellence in universities. Anecdotal evidence suggests that in recent years a large proportion of new appointments at UK universities are made from outside the UK.'

2010 scene, implications

2010 scene, implications

Recent years have seen increasing concentration of academic statistics in fewer centres.

RAE2008 ranking: Oxford (24.5 researchers submitted), Cambridge (16), Imperial (13.9), Bristol (23), Warwick (24) .....
Of 31 institutions, only 1 outside top 10 in the ranking submitted more than 14 researchers.

2010 scene, implications

Recent years have seen increasing concentration of academic statistics in fewer centres.

RAE2008 ranking: Oxford (24.5 researchers submitted), Cambridge (16), Imperial (13.9), Bristol (23), Warwick (24) .....
Of 31 institutions, only 1 outside top 10 in the ranking submitted more than 14 researchers.

Job prospects good. Institutions struggle to make appointments in statistics/OR/probability.

Positives

Increasingly, good departments taking young researchers, just completing Ph.D., with commitment to teaching and research, into permanent positions, nurturing them.

Positives

Increasingly, good departments taking young researchers, just completing Ph.D., with commitment to teaching and research, into permanent positions, nurturing them.

Post-doc experience not essential.

Positives

Increasingly, good departments taking young researchers, just completing Ph.D., with commitment to teaching and research, into permanent positions, nurturing them.

Post-doc experience not essential.

Salary levels OK. [Starting salaries around £35,000-£45,000, say].

Negatives

Current financial constraints. Savage funding cuts more than likely. ‘New blood’ always seen as crucial. Competition more severe?

Negatives

Current financial constraints. Savage funding cuts more than likely. 'New blood' always seen as crucial. Competition more severe?

Departments find recruitment to senior positions difficult. With demographic structure, implies junior people often required to take on positions of responsibility [admissions, teaching management etc. etc.] early.

What's involved?

Commitment to:

What's involved?

Commitment to:

- teaching

What's involved?

Commitment to:

- teaching
- research

What's involved?

Commitment to:

- teaching
- research
- administration

Support

Typically, strong support in development of teaching and administration.

Support

Typically, strong support in development of teaching and administration.

Mentoring.

Support

Typically, strong support in development of teaching and administration.

Mentoring.

Institutions typically have elaborate induction schemes, often leading to formal teaching qualifications [e.g. Imperial's CASLAT]. Getting through probation is (at least in UK) unlikely to be ordeal.

Support

Typically, strong support in development of teaching and administration.

Mentoring.

Institutions typically have elaborate induction schemes, often leading to formal teaching qualifications [e.g. Imperial's CASLAT]. Getting through probation is (at least in UK) unlikely to be ordeal.

Lower initial teaching workloads, etc., etc.

The research side

More awkward to learn. Experience of what's involved through Ph.D.

The research side

More awkward to learn. Experience of what's involved through Ph.D.

Departments seek evidence of independence in research, ability/potential to publish high-quality research in prestigious outlets. 'Workload formulae' might recognise research as contributing, say, 60% of working time. RAE/REF places most weight on 'quality of research outputs'.

For healthy, supportive research environment, critical mass important.

For healthy, supportive research environment, critical mass important.

Establishment of independent contribution to research can be difficult, but can be collaboration driven, stem from consultancy, be highly applied etc. etc.

For healthy, supportive research environment, critical mass important.

Establishment of independent contribution to research can be difficult, but can be collaboration driven, stem from consultancy, be highly applied etc. etc.

Identifying the areas of research that are becoming important is a good skill to have. Self-confidence/esteem is crucial. ‘Always work with people who are cleverer than you are’.

Influence of RAE/REF

Considerable pressures on departments/researchers to increase quality, research income (grant and 'QR').

Under REF, statistics/OR/probability etc. will be combined into a single mathematics evaluation. Threat or opportunity? Will measure 'impact' of research on economy and society. Should advantage statistics, but the threat is that less mature research groups will be dominated by more established pure/applied groups.

But, for less established researchers...

But, for less established researchers...

- teaching is typically biggest source of departmental income, so this function is key;

But, for less established researchers...

- teaching is typically biggest source of departmental income, so this function is key;
- provisions within RAE/REF for ‘early career researchers’ (and other personal circumstances);

But, for less established researchers...

- teaching is typically biggest source of departmental income, so this function is key;
- provisions within RAE/REF for ‘early career researchers’ (and other personal circumstances);
- research funding crucial, but again new lecturers are aided by ‘first grant schemes’ etc.

Career progression

Can be swift, with attendant increase in salary. But academic salaries, even at professorial level, are pretty dismal.

Career progression

Can be swift, with attendant increase in salary. But academic salaries, even at professorial level, are pretty dismal.

In past, Lecturer/Senior Lecturer grade was perhaps career expectation of most, now Reader/Professor might be career expectation of most.

Career progression

Can be swift, with attendant increase in salary. But academic salaries, even at professorial level, are pretty dismal.

In past, Lecturer/Senior Lecturer grade was perhaps career expectation of most, now Reader/Professor might be career expectation of most.

Institutions generally have promotions procedures that are transparent, non-discriminatory, with well-defined criteria. These will involve high-quality contributions in teaching, research and administration. Realistically, research is the crucial criterion, certainly to Reader/Professor.

Pressures

Pressures

- Research can be difficult, lonely, frustrating.

Pressures

- Research can be difficult, lonely, frustrating.
- Great deal of self-discipline is required.

Pressures

- Research can be difficult, lonely, frustrating.
- Great deal of self-discipline is required.
- Time management (being an effective teacher, tutor, administrator, committee member, researcher, reviewer,.....) can be hard. How best (in terms of personal utility) to allocate efforts non-obvious. [Workload formulae offer little guidance].

Pressures

- Research can be difficult, lonely, frustrating.
- Great deal of self-discipline is required.
- Time management (being an effective teacher, tutor, administrator, committee member, researcher, reviewer,.....) can be hard. How best (in terms of personal utility) to allocate efforts non-obvious. [Workload formulae offer little guidance].
- Internal/external balance awkward. External involvements [RSS, reviewing, editorial work etc.] important, crucial to academic health, but difficult to balance against institutional responsibilities.

Pressures

- Research can be difficult, lonely, frustrating.
- Great deal of self-discipline is required.
- Time management (being an effective teacher, tutor, administrator, committee member, researcher, reviewer,.....) can be hard. How best (in terms of personal utility) to allocate efforts non-obvious. [Workload formulae offer little guidance].
- Internal/external balance awkward. External involvements [RSS, reviewing, editorial work etc.] important, crucial to academic health, but difficult to balance against institutional responsibilities.
- Time pressures uneven over year.

Pressures

- Research can be difficult, lonely, frustrating.
- Great deal of self-discipline is required.
- Time management (being an effective teacher, tutor, administrator, committee member, researcher, reviewer,.....) can be hard. How best (in terms of personal utility) to allocate efforts non-obvious. [Workload formulae offer little guidance].
- Internal/external balance awkward. External involvements [RSS, reviewing, editorial work etc.] important, crucial to academic health, but difficult to balance against institutional responsibilities.
- Time pressures uneven over year.
- Efficiency increases with age/experience, but creativity declines....

But, I like it!