

Graduate Education in the UK Illustrated from experience at Imperial College

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Graduate Schools in the UK

- Developed over last 10+ years
- UK Council for Graduate Education (UKCGE)
 - surveys in 1994 and 2003/4
 - www.ukcge.ac.uk/GraduateSchools
- In 2003/4, >70% of the 127 UK universities have a Graduate School
- All based on a single university, none inter-university
- Therefore more like US Graduate Faculty model
- Models:
 - 1 for whole HEI
 - >1, e.g. based on faculties or departments (only 2 programme based)
- Depends in part upon size and diversity of HEI

Roles and responsibilities of Graduate Schools in the UK

- Doctoral +/- masters students
- Recruitment
- Admissions, registration etc
- Quality assurance
- Transferable skills training
- Academic environment/interdisciplinarity
- Representation - an integrated 'voice' within the university

Developing a Graduate School

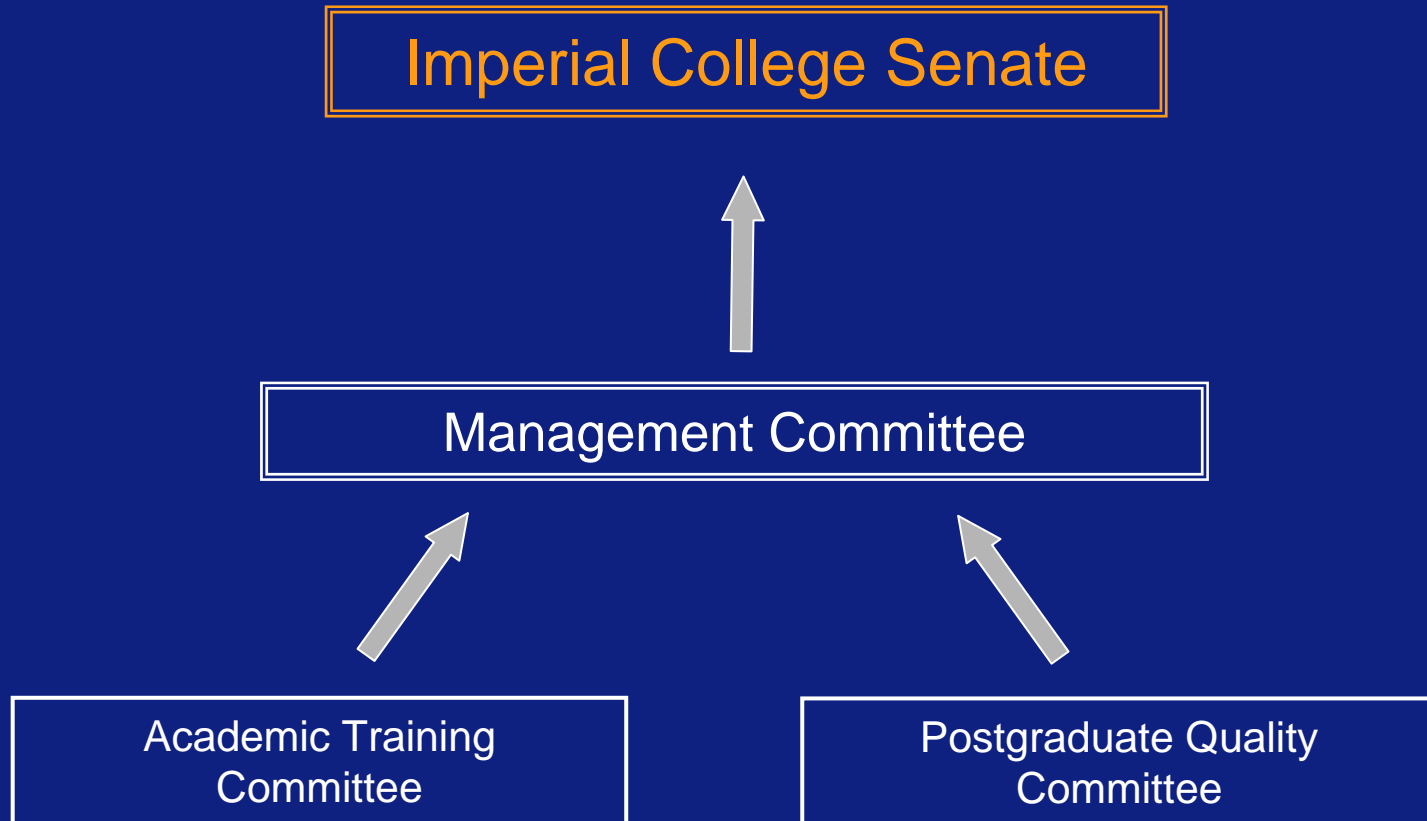


Our experience at Imperial College London

Graduate Schools at Imperial: the decision

- Should we have a Graduate School? (Feb 1999)
- Group set up to review the case for establishing a Graduate School
 - All departments invited
 - some more enthusiastic than others
- Recommendation to Imperial's Senate
 - to establish a Graduate School of Life Sciences and Medicine (GSLSM), 1999
 - to establish a Graduate School of Engineering and Physical Sciences (GSEPS), 2002

Committee structure & integration within Imperial



- *Flat, Minimal, Use of time-limited working groups for 'ad hoc' activities*
- *Student representation*

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Graduate Schools at Imperial: mission

- The Graduate Schools at Imperial were established to ensure quality and to further develop and enhance postgraduate training and excellence
- Focus not only on specialist academic training but in particular on interdisciplinarity and transferable skills



Imperial College London

- 3,000 academic and research staff
- 12,000 students
- Postgraduate students: ~4300 *in toto*; 60% research, 40% masters (~100 courses)
 - 70% EU (46%UK, 24% non-UK)
 - 30% overseas
- Situated on six campuses across London and two in the south-east of England
- A culturally diverse university with staff and students from all continents



Imperial College London

- 3 Faculties
 - Engineering
 - Medicine
 - Natural Sciences (Life Sciences & Physical Sciences)
- Tanaka Business School
- GSLSM: Life Sciences and Medicine
- GSEPS: Engineering and Physical Sciences, Business School



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Recruitment

- Co-ordination of
 - Applications for external funding
 - Advertising
 - Prospectus
 - Website

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Quality assurance: masters programme

- Biennial review of all masters courses by the Graduate Schools
 - Programme, examination results, external examiners' reports, student feedback etc
- Quinquennial review with external reviewers
- Review of all new course proposals with both internal and external reviewers



Quality assurance: doctoral programme

- MPhil Registration (within 3 months of enrollment):
 - Review to ensure suitable project, appropriate supervision and research facilities
- Transfer from MPhil to PhD (12-15 months)
 - Review to ensure student's progress is satisfactory and that future plan for PhD thesis is appropriate
- 6-monthly review of progress, confidential feedback for students



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Doctoral (PhD) training

- Evolution
- from a research apprenticeship
- to a multi-stranded education



The Importance of Skills Training

- “SET for Success” – a review, chaired by Sir Gareth Roberts, into the supply of science and engineering skills in the UK
 - ...*PhD students’ training should include at least 2 weeks’ dedicated training a year, principally in transferable skills...*
 - Further skills training for postdocs
- UK Research Councils/UK GRAD Programme
 - Joint skills statement
- UK government provided new funding

Skills training - 7 major areas identified

- Research skills and techniques
- Research environment
- Research management
- Personal effectiveness
- Communications skills
- Networking and team-working
- Career management

- “*Joint Skills Statement*”, UK Research Councils/UK GRAD Programme

Training in transferable skills

examples of workshops

- Science, research and integrity
- Time management and personal effectiveness
- Communication and presentation skills
- Writing skills
- Science and the media
- Commercialisation of research
- Information retrieval
- Statistics
- Teamwork
- Negotiation skills
- Motivation
- Career planning
- Thesis writing and completing the PhD
- *minimum attendance required*



Residential workshops

- 3-day residential workshops
- Aimed at 1st year doctoral students
- Student accommodation on site
- Space for team activities and informal interaction
- Attractive isolated location (captive audience!)
- Planning workshops for 3rd students
- Developed and delivered by Senior lecturers in Transferable Skills



Who delivers this training?

- Internal professionals
 - 2 Senior Lecturers in Transferable Skills, 1 Nov 2004
 - Science Communication Group, Humanities Department
- Training-the-trainers
 - Cohort of ~50 internal academic staff (from Science Departments)
 - Communications and presentation skills
 - Teamwork
- External professionals

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Academic environment/interdisciplinarity

- Welcome/induction session for all new students
- Christmas and Spring Distinguished Guest Lectures
- Summer Students' Research Symposium with student posters, prizes and invited research speaker
- May event for masters students
- Interdisciplinary workshops
- Extensive seminar programme advertised via website

Distinguished guest lectures

- Christmas

- Professor Ron Laskey (2000)
- Sir Paul Nurse (2001)
- Lord Bob May (2002)
- Professor Sydney Brenner (2003)
- Professor Steve Smith (2004)
- *Professor Richard Dawkins Nov 2005*

- Spring

- Professor Sir John Krebs (2001)
- Professor Julia Goodfellow (2002)
- Professor Jocelyn Bell-Burnell (2003)
- Professor Tony Ryan (2004)
- Professor Gordon Conway (2005)

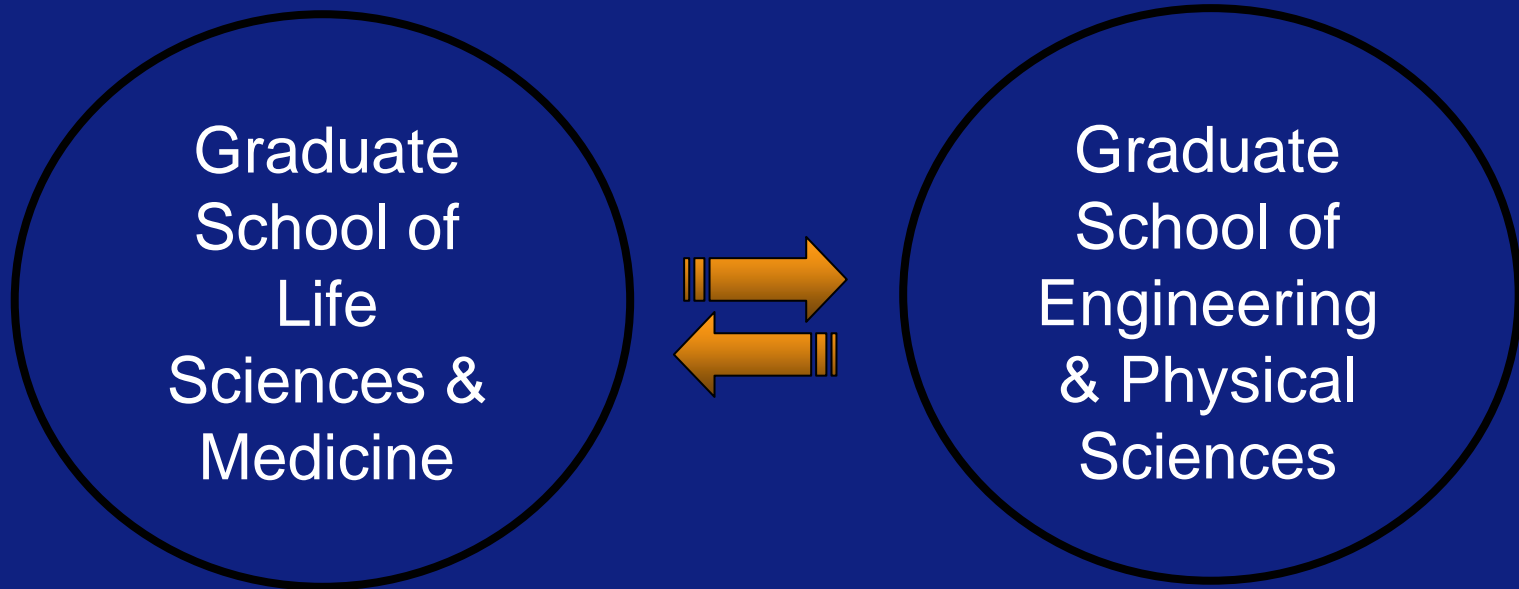


Students' Summer Research Symposium

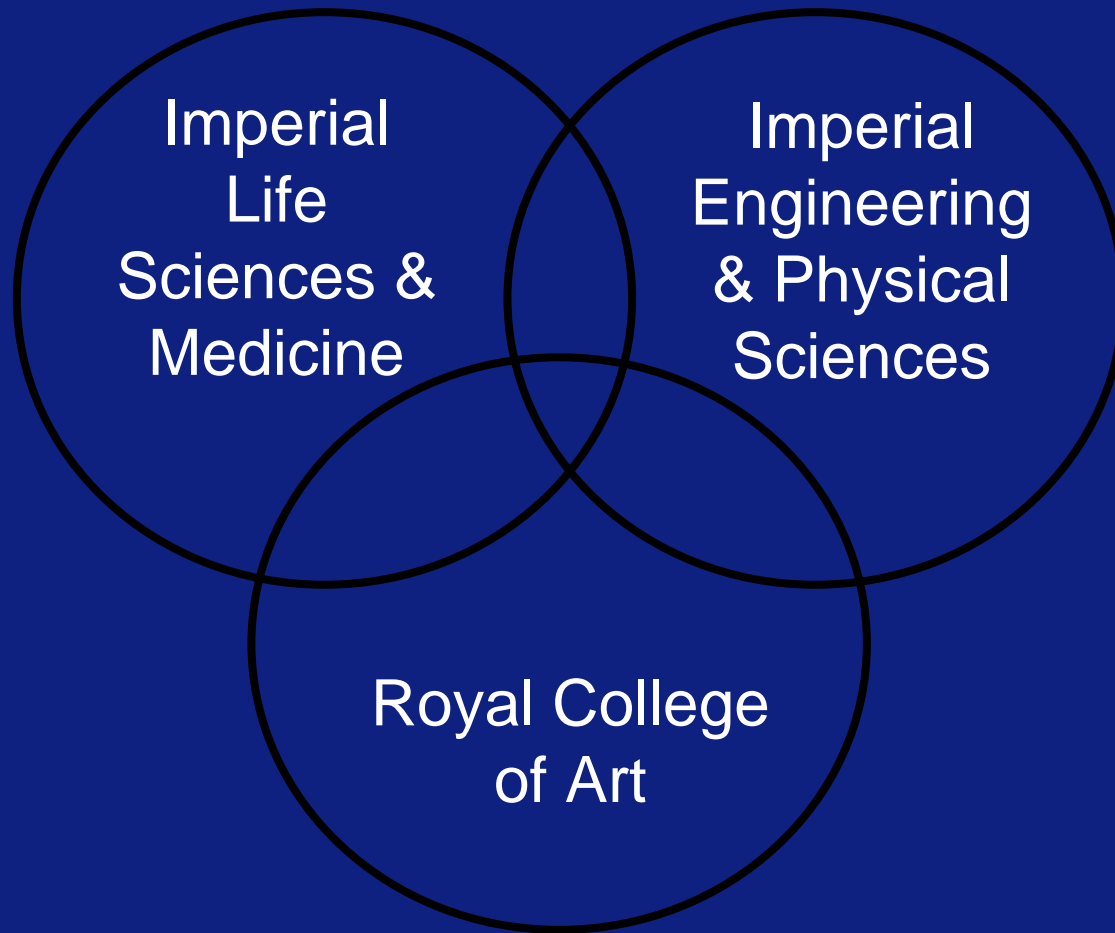
- Student research posters (~100), representing all departments
- Prizes for 6 best posters
- Distinguished Guest Lecture
- Reception/celebration



Inter- and multi-disciplinarity is a key feature of postgraduate training



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Assessment of effectiveness of programme

- Short term metrics
 - Anecdotal reports
 - Feedback forms on individual workshops
- Long term metrics
 - Surveys
 - Completion rates
 - RAE
 - Benefit to employers
 - Benefit to the economy

ROLE – Research On-Line Evaluation

- Survey takes the form –

Statement

Agree strongly \longrightarrow Disagree strongly

ROLE - Statements

- Quality of communication – College & down
- Supervision – quality, frequency, feedback
- Environment – space, equipment, quality
- Transferable skills training
- Research training

Assessment of effectiveness of programme

SURVEYS

- Students – national assessment

NO BASELINE

FUTURE ASSESSMENTS

- Supervisors – better researchers
- Employers – better employees

Benefits of a Graduate School

- Brings doctoral students and their studies into key position in the university (top management)
- Enables better link with research strategy and focus on research strengths
- Monitoring of student progression
 - Better projects; better supervision; better progress
- Transferable skills to enhance employability
- Enhances interdisciplinarity

- Benefits both the students and the university



Thank you