SCHOOL OF INFORMATICS

School Plan
2016/17 to 2018/19

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PLANNING SUBMISSION 2016/17 to 2018/19

Introduction

The academic year 2014/15 was a year of transition for the School of Informatics.

- The newly appointed Head of School came into post.
- The results and financial consequences of the REF2014 were announced and the focus shifted to planning for REF2020[1].
- The School temporarily relocated its teaching activity from Appleton Tower to Forrest Hill and its commercialisation and much of its computing support team to the Wilkie Building. This was to allow the external re-cladding of Appleton Tower.

As has been noted, the School took the opportunity to refresh its high-level strategy. The next step is to develop and implement the necessary sub-strategies and operational plans that will deliver the School's strategic objectives. This process has started and will continue through the current academic year.

There is a strong sense of identity and community within the School and its Institutes; which provide a sound basis for further growth and development. Nonetheless, there is scope to build a stronger sense of a collective community across the three main areas of activity of the School; research, teaching and commercialisation. This plan is will contribute to that process.

Whilst the nature of organisations and plans requires us to create structures and to address issues under discrete headings, it is important to recognise the interdependence of much of the activity described in this plan.

This is a three year plan and, while the actions identified are weighted towards the early part of the planning period, not all will be completed, or necessarily progressed, within the first year. Some actions are dependent on the School securing additional resource if they are to be taken forward effectively.

Overall delivery of the plan will be monitored by the School's Strategy Committee with detailed implementation planning and monitoring of areas of activity (eg research, learning teaching and student experience) delegated to the corresponding School committees.

This plan briefly considers the operating environment before going on to consider each of the main areas of activity of the School, identifying existing strengths, opportunities and consequent actions. Inevitably, such a plan cannot cover everything in which the School is engaged, however it is intended to provide a sense of direction and priority that will assist in the allocation of resources over the planning period. As ever, the plan will be continually reviewed and updated annually.

We are currently reviewing and developing appropriate targets and measure by which the achievement of our strategy and the implementation of this plan wqill be monitored. These will be included in a later iteration of this document.

Environment

The external environment continues to be one of some uncertainty and challenging public finances.

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[1] The next research excellence framework submission is expected to take place in 2020 or shortly thereafter.

We expect there to be a continuation of increasing competition for reducing real terms funding. In these circumstances, it is essential that the School maintains its reputation and leading position in the UK, whilst further enhancing our international profile.

There are suggestions that Government funding for Scottish and European taught students might in future be based upon a teaching equivalent to the research excellence framework (a 'TEF'). Whilst we would wish to be, and are, constantly seeking to enhance our curriculum offering, its delivery and the student experience, regardless of external drivers, a potential 'TEF' provides a further incentive to do so, as set out in this plan.

The constraints placed upon us by UK Visas and Immigration (UKVI), in recruiting non-European staff and students, are increasingly challenging. This is not just in terms of the need for recruits to meet the visa requirements but also the increasing costs, including NHS charges, now being placed upon those entering and remaining in the United Kingdom. In the case of staff, unless the University is prepared to address the burden of these costs, it will significantly limit our ability to recruit from the widest possible pool, especially early career staff at lower grades.

One more positive development is the potential for the re-introduction, in Scotland, at least, of student post-study work visas. This would significantly boost the international competitiveness of Scottish higher education whilst, in the case of Informatics amongst other disciplines, addressing a serious skills gap in the workforce in Scotland and in the UK.

The demand for our taught programmes continues to be strong and increasing, as evidenced by our 2015/16 student intake. In addition there are new opportunities that we are developing in on-line distance learning and MOOCs (massive on-line open courses) that have the potential to reach many more students.

Our research, researchers and graduates are in high demand, also. Both governments and the private sector are investing heavily in research and in product development. Government and the private sector are our funders, customers and collaborators but also our competitors. It is important therefore that we continue to focus on quality and on our reputation to provide us with our competitive edge when competing for resources and for people.

A significant element in our competitive edge is our reputation for engagement with industry, from spin-outs and start-ups to unicorns and multi-nationals. Initiatives such as the Data Lab innovation centre and the University's new Data Technology Institute provide opportunities for the School to further enhance its industry engagement and profile.

The School's physical environment is currently subject to some disruption, with the decant of teaching to Forrest Hill and commercialisation and much of computing services to the Wilkie Building, during the re-cladding and potential internal works to Appleton Tower. In addition, there is the prospect of further internal works within the Informatics Forum, and the imminent commencement of a major new build project for the Data Technology Institute, adjacent to the Forum. These projects inevitably cause physical disruption as well as absorbing a significant amount of management resource.

Research

The School maintained its lead in Informatics in the 2014 UK-wide research excellence framework (REF2014); unfortunately this did not translate into an increase in attributable research excellence grant, largely as a consequence of a change in the funding formula applied by the Scottish Funding Council.

Our lead over our closest comparator institutions narrowed in REF2014 when compared with the previous research assessment exercise (RAE2008). This is shown by the following graphs in terms of full-time equivalent staff.

Cat A growth RAE2008 v REF2014 (number of staff)
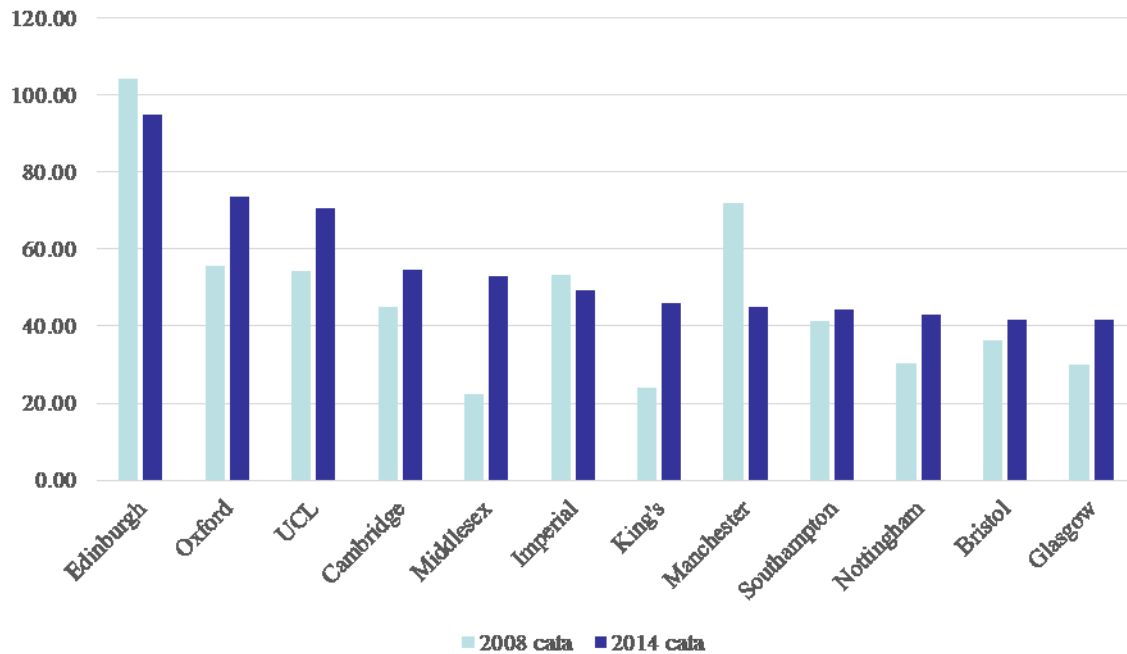
Cat A growth RAE2008 v REF2014 (%age)
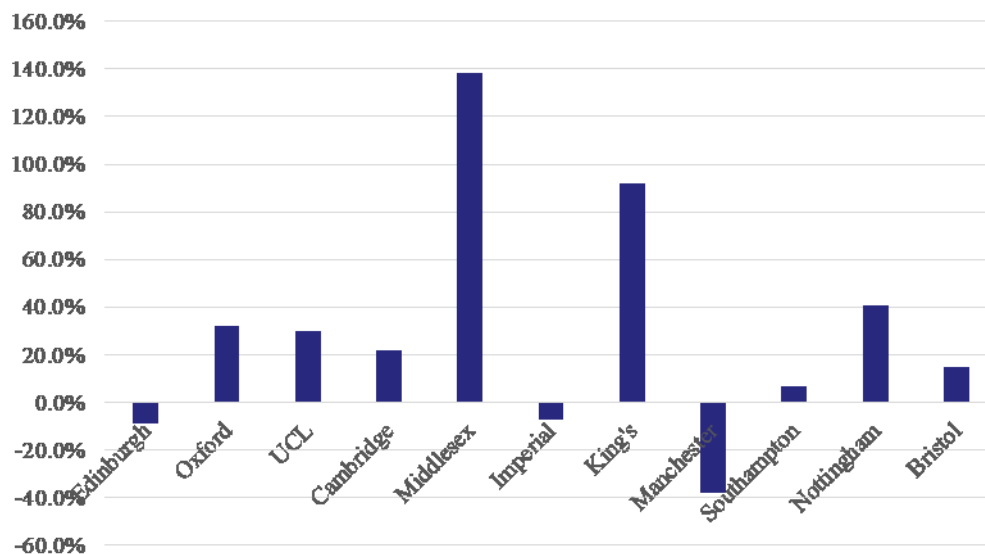
Our comparator institutions (especially Oxford, UCL and Cambridge) have made high quality appointments, mainly at professorial level, and are continuing to invest heavily in staff. This will boost their volume in REF2020, with the potential to usurp our UK leadership.

We will need to increase volume and optimise quality in REF2020. Our target is to increase our proportion of 4* outputs from 33% to 45% and to submit close to 150 category 'A' full-time equivalent staff (ftes) in our unit of assessment, in order to maintain our current leading position in

the UK. (We estimate that the regain our 2008 margin of leadership would require a submission of around 180 ftes.)

Informatics is still a young discipline with new areas emerging. The pace of development is accelerating. This creates opportunities for investment. It is important that the School maintains breadth as well as depth in its research, and that it is sufficiently nimble to be able to invest in emerging areas.

Existing Strengths

- The School of Informatics is the UK leader in Informatics research with an international reputation and unparalleled multi-disciplinary breadth.

- We are a joint venture partner in the The Alan Turing Institute, confirming our leading position in Data Science and further enhancing the profile of the School.

- Our three EPSRC funded Centres for Doctoral Training are now in their second year of recruitment and are well established with excellent academic and industry reviews.

- Our full cohort of postgraduate research (PGR) students, including all students not yet graduated, exceeds 300. This is one of the largest PGR cohorts in the UK and its scale is a significant factor in attracting further students and high calibre staff to the School.

- We participate in six EPSRC programme and platform grants, bringing over £8m in funding to Edinburgh, and are the lead institution for two of these grants.

- Through its Robotarium, the School provides a Robotics research and education facility, unparalleled in the UK, and partners with Heriot Watt University in the Edinburgh Centre for Robotics.

Opportunities

- There is wide and increasing recognition of the relevance of Data Science and Informatics to other fields of study, providing opportunities for the School to selectively and strategically establish partnerships.

- Our fundamental strengths in foundations, programming languages, databases, system architecture, robotics, machine learning, artificial intelligence and natural language processing mean that we are well placed to contribute to the development of innovative applications.

- The University has committed to the development of the Data Technology Institute (DTI), completing the development of the Potterow quadrangle. DTI will provide additional space for the School's Robotarium, for Design Informatics and for the three Centres for Doctoral Training. It will also house the University of Edinburgh hub of the Alan Turing Institute.

- The Data Technology Institute will provide space for the further expansion of Informatics research and doctoral training, plus the opportunity to interact and develop alliances with the other research communities and industry partners to be located within DTI.

- In February 2016 the School will receive one of only four copies of the Valkyrie humanoid robot from NASA (and the only European copy). Standing at 1.85m, weighing 120kg and boasting novel actuation and sensing systems, the robot is one of the most advanced humanoid robots in existence and will enable world-leading research in high degree of

freedom motion planning, whole body manipulation and motion transfer. As the centre piece of NASA's Space Robotics Challenge, the platform will also allow our robotics group to closely collaborate with leading research groups in the field from Florida's IHMC, MIT and Northeastern University.

Actions

1. We will continue to invest in our fundamental areas of strength.

2. We will identify and evaluate opportunities in developing and new areas of research to ensure that the School remains at the leading edge of Informatics. Current research drivers include (in no particular order):

   - Cloud computing;

   - Internet of things;

   - Big data;

   - Privacy and security;

   - Quantum computing;

   - Human-robot interaction;

   - Speech and language processing.

   These stimulate new foci for foundational research in areas such as algorithms, databases, machine learning, distributed computation, and software and systems architectures.

3. We will improve our grant success rate by identifying and sharing success factors and through more structured mentoring for early career staff by senior academics.

4. Where appropriate, we will encourage and support Research staff to submit grant applications as Principal Investigators, to assist in their personal development and to increase the potential volume of our REF2020 submission.

5. We will encourage peer mentoring to staff in applying for Fellowships. We will backfill those who are successful as a means to secure further quality and increase volume in the lead up to REF2020.

6. We will review opportunities for further programme and platform grants.

7. We will review the scope and structure of our Institutes to ensure that they continue to cover the range and balance of activities reflective of our rapidly developing academic disciplines.

Actions (PGR students)

8. Subject to the financial performance of the School being as projected, we will at least maintain (and increase, if possible) the current level of core School-funding to the annual intake of postgraduate research students. This is in addition to the School's funding of CDT student intakes and funding provided by Institutes.

9. We will take steps to ensure that more doctoral students submit within no more than four years study.

10. We will seek to enhance the experience of all PGR students, taking advantage of the opportunities and experience provided through the CDT model of student engagement and support.

Innovation, Knowledge Exchange and Impact

As well as its foundational research, the School undertakes translational research that has and will have significant industry, social and policy impact. We need to give these activities and impacts a higher profile, both within the School and more widely. Specifically, we need to ensure that our REF2020 submission fully reflects and demonstrates the scale of our impact across a range of sectors.

Existing strengths

- The School has an excellent reputation for industry engagement and commercialisation. Our approach has been studied and replicated by other European regions, for example the Flemish Government's programmes around Ghent and an Italian initiative in Trento, developing their industry engagement model/economic development based on research excellence in our field.

- The School has a large and active Industrial Advisory Board for Curriculum and each of the three CDTs has a very active industry/research day and associated IABs.

- We are recognised as one of the originators of the local innovation ecosystem represented by the Edinburgh technology cluster (now the largest in the UK outside of London) and have active links with over 100 companies, including local, national and global businesses. The School itself has been the originator of some 60+ new spin-outs and start-ups in the last eight years and is one of the leading Schools in the UK in this area.

- We host incubator space for early stage start-ups, facilitating staff and student business creation and opportunities for interaction between the start-ups and staff and students.

- The Scottish Enterprise funded Informatics Ventures 3 initiative further enhances the School's industry profile and creates opportunities to extend industry networks. Through its EIE (Engage, Invest, Exploit) events it provides a forum for early stage start-ups to secure venture funding. It also has become a platform for new alliances with other leading institutions – UCL and EIT Digital – because of our leadership in this area.

- The School and our staff and students undertake and participate in many outreach and public engagement activities, including in the Edinburgh International Science Festival. As one example among many, the School's Robotics research receives extensive coverage in external events and through the media, including television.

Opportunities

- The reputation of the School's research and its relevance to many aspects of modern business and life create myriad opportunities for industry and community engagement.

- These factors combine to make the School a very attractive partner to private and public sector organisations wishing to access the intellectual capital of the School.

- The Centres for Doctoral Training and, more recently, the School's involvement in The Alan Turing Institute, all based in part upon our strong industrial support, have created further opportunities for industry engagement.

- The Data Technology Institute provides further opportunities to develop strategic alliances with major private sector players who are expected to base research and development teams within the DTI.

- The opportunity and challenge is to leverage these 'attractors' with an efficient and structured approach that optimises the benefits to our staff and students, and to the School, in general.

Actions

1. We will pull together the many strands of our industry engagement into a structured programme which optimises benefits to all. This will include:

    - The 'Industry Club' as a new source of postgraduate research studentship funding.

    - The 'Data-X' initiative within the DTI as a new source of research funding.

2. We have already started to develop a database of industry and public engagement and outreach activity. We will continue to develop this database, including monitoring and tracking potential case studies to underpin an enhanced impact submission to REF2020.

3. We will raise the profile of our public engagement and outreach activity and improve alignment with our own objectives and those of the University. We are proposing a new post to take forward this and related activities.

4. We will investigate how Informatics Ventures and the EIE events and related activity may be continued beyond the current funding period. This may be integral to the strategy to obtain funding from Scottish Enterprise for the Data Technology Institute.

Learning, Teaching and Student Experience

The School underwent a successful Taught Programme Review in 2014/15 and we are following through on the actions identified in our interim response to the panel's report, many of which are incorporated, below.

We have recently introduced distance learning versions of two of our courses (Introduction to Vision and Robotics and Advanced Vision) which are being offered through the new postgraduate online Data Science, Technology & Innovation programme. In addition an online version of the Introductory Applied Machine Learning course is being developed for launch in 2016/17.

Our discipline areas are ones in which step change advances in theory and knowledge are not uncommon. This places a requirement on the School to continually review our curriculum to ensure it maintains its currency and relevance. It is not unusual for first year courses to include material discovered within the preceding decade.

The decant of teaching from Appleton Tower to Forrest Hill provides for a period of reflection on our learning, teaching and assessment. A programme is already underway to review our pedagogy, simplify our programme structures, and achieve efficiencies in our delivery (including in assessment).

We will consider, also, what changes need to be made to our teaching spaces in Appleton Tower in the light of the review. Feedback from students and staff will be key in influencing this process.

<u>Existing strengths</u>

- Our teaching is driven by world-leading research, highly attractive at undergraduate and masters levels, and informed by the latest research developments and emerging trends.

- Our extensive course portfolio covers the entire spectrum of Informatics, including foundations, technologies, cognitive science and cognitive neuroscience.

- Our core undergraduate disciplines are Computer Science, Artificial Intelligence, Robotics, Software Engineering, and Cognitive Science. We also offer a range of combined degrees. An integrated masters degree (MInf) provides a broad programme of study spanning theoretical foundations, programming languages, databases, systems architecture, machine learning, artificial intelligence, robotics and natural language processing.

- We offer seven taught masters (MSc) programmes, with over 300 students enrolled in 2015/16, and contribute to the MSc in Speech and Language Processing, led by the School of Philosophy, Psychology and Language Sciences.

- We offer substantial project based learning opportunities integrated in every degree programme.

- The School has strong links to industry, ensuring the currency and relevance of our curriculum to a wide range of careers and excellent graduate employability.

- The School produces highly skilled graduates, much sought after by industry.

- We have effective structures and processes for student engagement and feedback and there is a strong sense of community within the student body.

- Our National Student Survey results are above University averages in most areas however we need to continue to work on assessment load and feedback to students.

<u>Opportunities</u>

- Coding skills are highly valued by employers and we can further increase employability and market value of our graduates through ensuring that all students develop these skills through curricular and extra-curricular study and activities.

- We can further improve student satisfaction through continuous enhancement of our feedback and assessment. There is scope for better and more timely feedback; satisfying the students' need for high quality feedback to support their learning success.

- There is the opportunity to simplify the curriculum through a review to identify a set of courses which provide core and underpinning knowledge and a complementary and more fluid inventory of specialist courses which add depth and flavour to our curriculum.

- There is the opportunity to develop a limited number of new specialist courses, especially at honours and masters level, which will maintain the currency of our offering as well as supporting growth in student numbers as we increase our staffing complement.

- Efficiencies in teaching (including project supervision) and assessment will assist in accommodating growth in student intakes and cohorts.

Actions

1. We will simplify our curriculum through a move to more 20 point courses and achieve a 25% reduction in the number of optional courses at SCQF levels 9, 10 and 11.

2. Where other factors allow (such as time allocated to project work) we will move to end of semester assessment, in response to student feedback.

3. We will implement our recently introduced course workload framework to ensure a consistent level of assessment appropriate to the point value of each course.

4. We will improve coding skills across the student cohort through deeper embedding of practical coding challenges in courses and targeted extra-curricular activities (Informatics Summer of Code, Coding Club, participation in International Coding Competitions).

5. We will continue to seek improvements in the timeliness and value of assessment feedback to students through close monitoring and reporting on performance.

6. We will explore best practice and new models for student projects and project supervision in order to achieve more efficient use of staff time and scalability.

7. We will submit a case for an increase in the space allocated to Informatics teaching within the Appleton Tower and consult with students and staff on how this space may be best used to allow us to adapt to new and more efficient models of teaching and to improve the student experience.

8. We will continue to evaluate opportunities for extending our distance learning provision, based on experience gained from current initiatives.

9. Given the potential for significantly increased taught student numbers, we will consider whether it is appropriate to appoint to teaching-only roles, in order to allow us to ensure continuity of resourcing of years one and two and other required courses.

10. We will work with College and the International Office to find ways to better plan, forecast and manage student intakes, focusing on overseas and PGT students, in particular. This will include a proposal for a deductible deposit for PGT programmes to allow us to better predict and plan for PGT intakes in order to improve the student experience.

11. Our case for the recruitment of additional staff will be underpinned by the opportunity to further increase recruitment of overseas taught students, beyond current projections.

CROSS-CUTTING THEMES

People

The School is a multi-national, multi-cultural academic community representing a broad range of related academic disciplines. It comprises approximately 100 academics, 150 researchers, 300 postgraduate research students, 250 taught postgraduate students and 600 undergraduate students, plus technical, computing and administrative support staff.

<u>Existing strengths</u>

- Our international reputation and that of The University of Edinburgh, allows us to attract high calibre staff from around the world.

- We secured Athena SWAN Silver accreditation and are continuing to embed policies, process and behaviours to ensure all staff and students contribute to a welcoming and inclusive community.

- We have established performance and development review as a standard process within the School, with completion rates increasing year-on-year; with in excess of 90% completion achieved in 2014/15.

- We have revised the standard documentation for academic performance and development reviews to explicitly address impact, learning and teaching, public engagement and management and admin duties.

<u>Opportunities</u>

- We wish to continue to grow our academic community to take advantage of the many opportunities available within the breadth of Informatics research, education and outreach.

- Female staff and students are under-represented in our discipline areas. Our Athena SWAN accreditation provides a platform for us to continue to promote inclusion.

- We need to make performance and development review a more meaningful experience for more of our staff and ensure that more staff participate in the staff development opportunities available to them.

- There is the opportunity to more fully embed within the School some of the initiatives resulting from our Athena SWAN award and from our application for renewal.

<u>Actions</u>

1. We will continue to attract and invest in the best academic and research staff, wherever in the world they may be found.

2. We will review and improve our induction processes and support for personal and career development, including through mentoring of early career staff by senior academics.

3. We will continue to enhance engagement with performance and development review and provide support and training to ensure that it is a meaningful and relevant process.

4. We will seek to raise awareness of the full spectrum of activities and success across the School, in order to further build a collective sense of community and recognise and value different forms of contribution to the School's objectives.

5. We will encourage and support staff to contribute to, and deliver in, the breadth of activity across the School including research, teaching, knowledge exchange, outreach and management roles.

6. We will secure the renewal of our Athena SWAN Silver Award and ensure that promoting and valuing equality and diversity are intrinsic to the School and its activities.

Infrastructure

The School is based across four buildings, with research and administration within the Informatics Forum, teaching and student services currently decanted to Forest Hill, and commercialisation, commercial tenants and some of the computer services team currently decanted to the Wilkie Building. The School also is responsible for space within 15 South College Street, which accommodates Disney Research and Data Lab.

The decanted functions are scheduled to return to a re-clad Appleton Tower in June/July 2016. If plans for some internal re-configuration of Informatics spaces within Appleton Tower proceed, the return is likely to be delayed by a year for teaching and up to a year for the occupants of the Wilkie Building.

Existing strengths

- Appleton Tower (and temporarily Forrest Hill) provides purpose designed space for Informatics teaching with computing facilities served by the School's 'DICE' platform.

- The School benefits from the modern dedicated facilities provided for research by the Informatics Forum, although space within the Forum to accommodate growth continues to be a challenge.

- The proximity of the Informatics Forum to the Appleton Tower, where the majority of the School's teaching takes place, is both convenient and contributes to the sense of identity and community within the School. The location of both, within the central campus and close to the amenities of Edinburgh city centre, is attractive to both staff and students.

- The School's computing infrastructure, including 'DICE', enables us to meet the diverse needs of our large student body efficiently, reliably and securely, as well as underpinning the specialist computation needs of our researchers and providing commodity Linux computing to academic staff.

Opportunities

- The current decant of teaching to Forrest Hill provides the opportunity to review our space and infrastructure needs for teaching.

- The Data Technology Institute, scheduled for completion in 2018, will provide space for the further development of our research and commercialisation activity and new opportunities for academic and industry partnerships.

- The combination of the above provides the opportunity to accommodate growth in research, teaching and commercialisation and to consider how we make most effective and efficient use of the space available to meet the needs of each of these activities.

Actions

1. We will consult with staff and students on the potential for additional and reconfigured teaching space within Appleton Tower, to meet the current and future needs of our growing taught student body.

2. We will continue to review space utilisation within the Informatics Forum and take actions to ensure optimisation of use whilst maintaining the essential character of the building, including spaces for staff and students to gather and interact.

3. We will work with the Data Technology Institute project board to ensure that the future research, research training and commercialisation needs of the School are appropriately catered for within the new building and that these are fully integrated with the activities within the Informatics Forum.

4. Over the next three years we will undertake a review of our computing needs and infrastructure to ensure that we continue to maintain pace with developments in our field. This will include a review of the extent to which current and future needs may be met by resources provided by the University's core Information Services.

Internationalisation

The School has a wide range of international links and collaborations, many through the initiative of individual staff and as a result of collaborative research programmes.

In addition, the School has links with institutions in China and North America which result in relatively small numbers of full-time and visiting taught students studying in Edinburgh each year.

Existing Strengths

- The international reputation of the School and many of its academics make it an attractive partner to overseas institutions seeking a collaborative partner and to students wishing to study or undertake postgraduate research.

- Both the staff and students of the School represent a multi-national, multi-cultural and welcoming community.

- We are developing an EU funded teaming programme to develop a Centre of Excellence in Estonia which will provide a platform joint initiatives and interaction.

Opportunities

- The School is in a position to further leverage its reputation as an international centre of excellence in Informatics research, doctoral training and education.

- There is the opportunity to develop some of the School's existing international links into a limited number of wider and deeper strategic alliances, with further benefits to both institutions.

Actions

1. We will continue to attract and invest in the best academic and research staff, wherever in the world they may be found.

2. We will continue to encourage staff to establish international links and collaborations, where these advance our objectives and contribute to our international profile and impact.

3. We will target increases in overseas taught students through developing existing and new international institutional relationships, including working with other Schools, College and the International office to identify and exploit opportunities; significant growth being predicated on a commensurate increase in resource in order to be able to accommodate these students and to provide a quality student experience.

4. We will work with others to seek ways to increase the affordability of our postgraduate research programmes to more international candidates.

STUDENT RECRUITMENT

Postgraduate research (PGR)

We now have a second intake of CDT students with three further intakes to come, under current funding. This will see our PGR cohort continue to grow to 2017/18, with a projected decline in 2019/20, as current funding for CDT intakes finishes (although we will apply for renewal of the CDTs, when the opportunity arises). We are planning to, at least, maintain School funding at the current level for PGR student intakes throughout the period. This is in addition to the School funding commitment to the CDTs.

The projections[2] below (which include CDT MSc(R) students) include full-time students during their funded period only. Currently (December 2015) an additional 11 students are interrupted, 60 or so students are writing up and a further 35 students have submitted. These are not included in the figures below.

	2015/16		*2016/17*		*2017/18*		*2018/19*		*2019/20*	
	Intake	*Cohort*	*Intake*	*Cohort*	*Intake*	*Cohort*	*Intake*	*Cohort*	*Intake*	*Cohort*
Home	52	103	55	98	55	95	54	93	54	91
CDT	28	54	26	79	27	103	28	103	0	77
O'seas	17	50	18	53	18	52	19	50	19	51
Total	*97*	*207*	*99*	*230*	*100*	*250*	*101*	*246*	*73*	*219*

There is significant demand from excellent overseas candidates that the School is unable to satisfy, due to the limited sources of funding for such students. This is an area which the School could and would wish to grow if additional funding were to be available. At present many of these students are lost to our competitor institutions.

The three CDTs have received excellent feedback from students and from academic and industry advisory boards.

The added value to the students provided by the CDT model has been much commended and it is an expectation of EPSRC that the wider (non-CDT) student experience will be enhanced, also, as a consequence of the School hosting the CDTs.

The CDTs have provided additional and new opportunities for interaction with industry partners and we see the CDTs as being central to a renewed, coordinated approach to industry engagement. We would expect that this would include further industry funding for studentships.

The business case for the Data Technology Institute envisages renewal of funding for the CDTs, which would result in further growth in our PGR cohort, beyond 2018/19.

We are aware that the projected growth will put pressure on the capacity for research supervision. The need to increase this capacity will be incorporated in our case for further investment in

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[2] Student numbers correspond to those in the Diagonal Tables.

academic staff however we are aware, also, that we need to take steps to ensure that more students submit within a maximum of four years.

Student intake (taught)

Undergraduate

Our undergraduate full-time student year 1 intake in 2015/16 was 174. Our SEU target for 2016/17 to 2018/19 has been advised by College as 125. College has advised a growth target of 5% per year for RUK students. We are currently ahead of this target and are therefore projecting further modest growth, which we believe to be achievable based on past demand.

We see the most significant potential growth as being in overseas students. The projections[3] below show an 80% increase in the overseas cohort, over the period.

Our projections are as below.

	2015/16		2016/17		2017/18		2018/19		2019/20	
	Intake	Cohort	Intake	Cohort	Intake	Cohort	Intake	Cohort	Intake	Cohort
SEU	113	491	125	495	125	511	125	488	125	489
RUK	24	53	25	67	26	79	27	88	28	92
O'seas	37	100	40	123	43	144	46	166	50	182
Total	***174***	***644***	***190***	***685***	***195***	***734***	***199***	***742***	***205***	***763***

The above intake figures exclude direct entry into later years (although these are included in the cohort figures). In the main these are relatively small, however we do see potential for increasing the number of overseas students entering in later years, through 'two plus two' and similar arrangements.

Overall, the above projections show an increase of close to 20% in the total full-time undergraduate cohort. This will require us to realise efficiencies in teaching and assessment in order to accommodate this growth.

The above growth would put significant strain on existing teaching space (even after the return of teaching to the Appleton Tower). This growth will therefore, in part, underpin our case for an increase in the space allocated to teaching in Appleton Tower.

We believe that there is further potential for growth, especially in overseas students, however this would be dependent on investment in staff and other resources.

Postgraduate taught (PGT)

Our PGT full-time intake for 2015/16 showed a 60% increase over 2014/15 and a 91% increase over 2013/14. PGT numbers are subject to significant year-on-year fluctuation and we regard the 2015/16 intake to be exceptional. Also, there will be a spinal point fee increase in most PGT fees in 2016/17, in part to compensate for the loss of income from additional programme costs (APCs), but still resulting in a significant net increase in fees.

The 2015/16 intake has and will place an exceptional demand on staff and space, particularly in relation to projects and project supervision. Whilst this is being managed as best it can, there is an inevitable risk to the student experience.

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[3] Student numbers correspond to those in the Diagonal Tables.

Taken as a whole, therefore, we are projecting[4] PGT intakes below those of 2015/16, but significantly ahead of 2014/15 and 2013/14, based on past trends. We will need to work closely with the College recruitment office, if we are to try to manage intakes, in this way.

	2015/16	*2016/17*	*2017/18*	*2018/19*	*2019/20*
	Intake	*Intake*	*Intake*	*Intake*	*Intake*
Home	93	80	80	80	80
O'seas	151	130	130	130	130
Total	***244***	***210***	***210***	***210***	***210***

This does not mean that we do not see significant further potential growth in PGT students. It just means that such growth will require further resource beyond that included in the current projections.

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[4] Student numbers correspond to those in the Diagonal Tables.