

## 1. Vision for the School in 2021/22

*School Leadership's vision for the School in three years' time in terms of size, shape and nature (Will it be larger/smaller; more/fewer international students; wider/narrower academic focus)*

The School foresees modest growth over the planning period.

Academic staff: some 'in-fill' new posts to bolster existing strengths or extend into related areas; potentially, a few strategic investments to develop new areas of strength; recruitment of further University Teachers.

Support staff: need to invest in support staff to meet demands created by recent growth – investment in support staff cannot be conditional on further growth.

Taught students: growth already built-in to UG cohort; maintain similar proportion of international students but diversify origin (e.g. more from USA and Canada); better distribution across sub-disciplines; no growth in PGT in short-term but potential for some managed growth in new programmes; opportunities to be developed in distance education if additional resources can be made available.

Research students: continued growth in research students including, but not limited to, the new round of EPSRC and UKRI Centres for Doctoral Training.

### **Key issues to resolve in this planning cycle:**

*Identify the issues that the School wishes to see resolved and that require co-operation between budget holders in order that the University strategy can be delivered. Suggest possible solutions/actions where possible.*

Need to be clear what the University's response will be to the various possible outcomes of the English HE review (especially in relation to fees) and, of course, to Brexit.

The School needs to have confidence that it has control over its student admission numbers.

Additional space is required to meet existing and future needs (staff offices, teaching accommodation, research and teaching labs, server space for increasing compute requirements). The School is doing what it can to reconfigure within its existing footprint, but this will not be sufficient.

Importantly, there is a need to rebuild staff morale in the School. This will be addressed through greater clarity of objectives and the reasons behind consequent actions, improved operation of governance and management, more effective sharing of information and transparency of what is within the power of the School to control, what it can influence, and how, and where the School is simply subject to decisions and policies determined by others.

## 2. Leadership in learning

**School ambitions for education and the student experience**

*Summarise how the School intends to contribute to the University Learning & Teaching Strategy ([https://www.ed.ac.uk/files/atoms/files/learning\\_teaching\\_strategy.pdf](https://www.ed.ac.uk/files/atoms/files/learning_teaching_strategy.pdf) ) and to the Student Experience Action Plan (see University Executive 25<sup>th</sup> September, paper B). How will the School enhance the support provided to its students (including disabled students) and embed practices and awareness at all levels.*

**We will work in partnership with students to bring about enhancements to learning and teaching:**

- We are building an effective partnership with our students through mechanisms such as weekly reps meetings, support of a highly effective InfPals group, programming club, and a range of discipline-related societies (CompSoc, Hoppers, ...). We are currently piloting a fund administered by staff and students to support individual student initiatives as well encouraging staff and students to apply for Student Experience Grants. We also support larger student initiatives such as HYPED hyperloop and EUFS driverless car teams.

**We will develop and enhance our curriculum:**

- We are developing and enhancing our curriculum through a thorough review that emphasises the distinctiveness of our research supported by the development of new labs (e.g. IoT and Robotics). The development of Graduate Apprenticeships and our Design Informatics initiative bring experiential learning and creativity into our portfolio.
- We are converging on 'Learn' as our primary online learning platform, along with a limited number of ancillary tools, where required, so that students have a consistent experience and so that students and staff are better supported in the use of these tools. This is part of an increased emphasis on blended learning and will also support the use of online environments for the development of learning at a distance.

**We will use the flexibility of the standard undergraduate degree structure to build a rounded learning experience:**

- Our students exploit the flexibility in the curriculum by engaging in a wide range of courses provided by other Schools. We are deepening our cooperation with the School of Mathematics (our main joint degree partner) through a shared University Teacher appointment specifically directed to support joint students on the Graduate Apprenticeship Programme.
- Through a curriculum review, we are seeking simplification and rationalisation of the School's curriculum offering to provide clearer and more coherent pathways for students, whilst maintaining the breadth and variety to offer a rich learning experience across the range of Informatics subjects and beyond.

**We will offer our postgraduate taught students the opportunity to develop cutting edge and advanced skills and knowledge in their chosen field:**

- Our five-year MSc in Informatics and our one-year postgraduate taught MSc programmes in Data Science, Artificial Intelligence, Computer Science, Privacy Security and Trust, Business Informatics and Design Informatics offer a broad range of interdisciplinary and research-driven experiences for our MSc students. The School is developing experience of distance education through its participation in the DSTI programme and has made, and is making, strategic investments in academic and professional services posts to support further developments in blended learning and distance education. The School will undertake a review of the opportunities available, including DLAS, in formulating its strategy and plan in this area.

**We will nurture a learning community that supports students:**

- We are nurturing a learning community through a very successful PALS scheme, employing a highly effective Student Support team that support academics and students in making the most of academic and pastoral support. Innovating in the teaching of programming to provide more effective feedback and provide students with a richer learning environment.

**We will recruit and nurture excellent teaching staff:**

- We are nurturing excellent teaching through dedicated University Teachers working alongside lecturing staff, including on large courses, to relieve pressure on academic staff and improve the staff and student experience.
- We are providing more opportunity for exploration of pedagogical issues developing new ideas through regular Teaching Lunch meetings and bi-annual teaching days. We support the transfer to University-wide digital learning tools through our employment of a Learning Technologist (with further, similar, posts planned) and provide discipline-specific training to our tutors and demonstrators.

**We will optimise academic and professional support staff time devoted to core learning and teaching activities:**

- Further 'catch-up' investment in support staff roles will help optimise teaching staff time for core learning and teaching activities. We keep processes and structures under review and seek continuous improvement in both delivery and efficiency. We have invested in professional student support roles to both improve student experience and to relieve pressure on academic staff and we welcome, and will participate fully in, the University's review of Personal Tutoring and wider student support. We await further developments as a consequence of Service Excellence with interest and some concerns which will be, hopefully, allayed.
- We are frustrated by the lack of investment and the provision of effective support for "business as usual systems", whose efficiency has a direct impact on our operations and we argue for simplification and the resolution and elimination of anomalies and difficult "corner cases" (e.g. issues around provision of resits to VUGs).

**Student recruitment, retention and diversity**

*Identify how the School will address widening participation, equality and gender balance and the mechanisms by which this will be achieved. Highlight areas of co-operation with other Schools and Professional Service Groups (link to Student Recruitment Strategy [https://www.ed.ac.uk/files/atoms/files/student\\_recruitment\\_strategy.pdf](https://www.ed.ac.uk/files/atoms/files/student_recruitment_strategy.pdf) , and link to Widening Participation Strategy <https://www.ed.ac.uk/student-recruitment/widening-participation/about/widening-participation-strategy>)*

The School is experiencing very strong and very significantly growing demand for its programmes, especially from international students. This presents challenges in managing intakes and we are working with College Admissions on approaches that will help us to better manage applications and offers to achieve target intakes.

The School has a successful track record in widening participation and has a particularly high proportion of female undergraduate students (30+%) in comparison to other similar Schools/Departments in the UK. Efforts will continue to build on current success, both with School initiatives, but increasingly as part of College-wide (STEM) and University initiatives.

In relation to student support, the School is placing greater emphasis on induction and transitions. This will support continued improvement in retention. Specific developments include the use of the new Mathematics course, Fundamentals of Algebra and Calculus and new approaches to teaching programming, to assist students who require greater underpinning in these areas.

The student experience (and staff experience which, in turn, impacts student experience) is highly dependent on the School's ability to manage its student intake numbers.

The School welcomes the University's review of personal tutoring and will engage with the review to the fullest extent to which it is able.

**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (e.g. will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)
Continued implementation of the taught curriculum review with the objectives of simplification, more structure and more equitable teaching and assessment loading across programmes.	Continued implementation of the taught curriculum review with the objectives of simplification, more structure and more equitable teaching and assessment loading across programmes.	Evaluation of curriculum review against stated objectives.
New MSc in Cyber Security.	New MSc in Business Informatics (with Business School).	New MSc in Applied Robotics (possibly with Engineering).
Review of personal tutoring and student support.	Implementation of new approach to personal tutoring and student support.	Evaluation of new approach to personal tutoring and student support.
Review of School distance education and development of new School strategy and plan.	Potential introduction of limited new distance education pilots.	Further roll-out of Informatics distance education.

**Risks:** *to the delivery of the Learning and Teaching Strategy, the Student Experience Action Plan and the Student Recruitment and Widening Participation Strategies.*

- Need for further teaching space/labs; also an additional (400+) lecture theatre in the central area.
- Staff retention in face of increased teaching load and compliance requirements (eg UKVI Tier 4 monitoring).
- Brexit and English HE review could impact on ability/desirability to recruit from relevant domiciles.
- Poor support for 'business as usual' student systems (e.g. responsiveness of EUCLID; inability of the APT system to support resit diets) has significant impact on staff morale (both academic and teaching organisation) and knock-on effects for student experience.

**3. Leadership in research**

**SCHOOL OF INFORMATICS outline plan 2019-22**

<p><b>Research; focus, capacity and output:</b></p> <p>The School intends to maintain and strengthen its position as one of the leading informatics research centres in Europe and in the top 20 in the world.</p>	<p><b>Innovation and impact:</b></p> <p>Whilst the School has a strong track record of innovation and impact, a renewed emphasis will be placed on encouraging and supporting student and staff entrepreneurial activity.</p>	<p><b>Research collaborations:</b></p> <p>The School has a wide range of UK, European and international research collaborations, both with other research institutions and with industry partners. A number of new collaborations are being developed (especially in the Far East).</p>
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**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (eg will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)
Increased support for research assistants to establish themselves as independent researchers through mentoring, training and personal development opportunities.	Continued support for research assistants to establish themselves as independent researchers through mentoring, training and personal development opportunities.	Continued support for research assistants to establish themselves as independent researchers through mentoring, training and personal development opportunities.
Continued support for early career researchers to develop their research and grant portfolio through mentoring, training and personal development opportunities.	Continued support for early career researchers to develop their research and grant portfolio through mentoring, training and personal development opportunities.	Continued support for early career researchers to develop their research and grant portfolio through mentoring, training and personal development opportunities.
Recruitment of new chair and research group in applied robotics/robotic manufacturing (potentially jointly with Engineering).	Development of applied robotics/robotic manufacturing research area.	Further development of applied robotics/robotic manufacturing research area.
Consideration of establishment of conversational artificial intelligence research area and subsequent planning.	Potential recruitment of new chair and research group in conversational artificial intelligence.	Development of conversational artificial intelligence research area.
Early investigations into possibility of establishment of a new chair and multi-disciplinary research group in the ethics of artificial intelligence and machine learning, in conjunction with others (e.g. Law, Business School, Social and Public Policy).	Potential development of proposal for establishment of a new chair and multi-disciplinary research group in the ethics of artificial intelligence and machine learning.	Potential recruitment of new chair and research group in the ethics of artificial intelligence and machine learning.
Decision on new Centres for Doctoral Training funding and development and initial recruitment of first year intake.	First year intake to new CDTs.	Second year intake to new CDTs and first PhD year for 2020 intake.

**REF 2021 readiness and contribution to strategy:** *describe the current position of the School and what steps will be taken over the planning period in preparation for the REF 2021.*

The 2018 mock-REF exercise showed the School to be in a strong position for REF2021. Recent recruitment of additional academic staff and the addition of independent researchers from elsewhere in the University (e.g. EPCC and MVM), will ensure that the University submission continues to represent the largest cohort of Informatics and Computer Science (UoA11) researchers in the UK. Planning and preparation is resourced and well in hand. The School is confident of at least maintaining its position relative to its UK peers. There are specific opportunities to improve performance in 'impact' and 'environment', through stronger and better presented submissions.

**Risks:** *to the delivery of the research strategy for example: 1) Poor REF outcomes 2) UK excluded from EURC or Framework awards leadership.*

- Brexit will jeopardise our relationships with EU research partners as well as potentially reducing our access to funding. It could also result in a decline in PGR student applications from the EU.
- Staff retention – dissatisfaction with teaching, student support (both due to increased taught student cohorts) and compliance demands on staff; very much higher salaries available in industry for many staff; uncertainty and instability associated with Brexit.

- Greater investment needs to be made in leadership development for academic staff to provide for succession planning for mid-level and senior academic management roles within the School.

#### 4. Influencing globally

##### Global engagement

*Summarise how the School contributes globally (research collaborations should be reported in section 3 and industrial collaborations in section 6). <https://global.ed.ac.uk/sites/default/files/atoms/files/Our%20Global%20Engagement%20Plan.pdf>*

The School has an international reputation as a leading centre for informatics research, education and knowledge transfer. It has a significant number of international partnerships and collaborations.

Current priorities include developing further research collaborations with international partners, especially in the Far East, and diversifying the School's international taught student intake, especially in relation to increasing the intake of students from North America.

In relation to the Global Challenge Research Fund, opportunities for the School lie principally in partnering with colleagues in other Schools and Colleges.

**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (eg will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)
Work with Edinburgh Global to develop and implement a student recruitment plan to increase taught student intakes from North America.	Further development and implementation of a student recruitment plan to increase taught student intakes from North America.	Continued implementation of a student recruitment plan to increase taught student intakes from North America.
Investigate, evaluate and develop, if appropriate, new international collaborations, including in the Far East (eg Singapore, Hong Kong and China).	Investigate, evaluate and develop, if appropriate, new international collaborations, including in the Far East (eg Singapore, Hong Kong and China).	Investigate, evaluate and develop, if appropriate, new international collaborations, including in the Far East (eg Singapore, Hong Kong and China).
Investigate, evaluate and develop, if appropriate new collaboration with CNRS in quantum computing, building on existing links.	Potentially, develop joint lab in quantum computing.	Potentially further develop joint lab in quantum computing and consider extension to other research areas.
Investigate further potential collaborations with European universities, including building on existing links.	Develop potential collaborations with European universities.	Further develop potential collaborations with European universities.

**Risks:** *to the delivery of the international strategy and priorities described above.*

- Brexit.
- Restrictions to immigration and visas.

#### 5. Contributing locally

**To build and strengthen relationships between the university, the city and our communities**

*For example highlight how the School will contribute to the University Community Engagement Strategy [https://www.ed.ac.uk/files/atoms/files/community-engagement-strategy\\_web\\_final.pdf](https://www.ed.ac.uk/files/atoms/files/community-engagement-strategy_web_final.pdf)*

The School is a key player in the Edinburgh and Scotland technology cluster, with the School's research and talent being a major driver of economic activity.

The School is working directly with Edinburgh City Council, the Scottish Environment Protection Agency and others on the use of data to improve effectiveness and efficiency in the delivery of public services.

Staff within the School are very active in outreach and public engagement activities, including working with schools and participating in Science Festivals and similar events.

**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (eg will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)
Development of a 'Data Clinic' to link local public and third sector organisations to students to provide pro bono advice on collection, analysis, presentation, interpretation and use of data.	Further development of the Data Clinic.	Continued development of Data Clinic including evaluation and review.
In conjunction with Edinburgh College of Art (through Design Informatics), Edinburgh Futures Institute and others, offer a series of public engagement events, including through use of the refurbished 'InSpace' event space.	Continue to offer a series of public engagement events, including through use of the refurbished 'InSpace' event space.	Evaluate and potentially Continue to offer a series of public engagement events, including through use of the refurbished 'InSpace' event space.

**Risks:** *to the delivery of the above.*

Some academic staff are very engaged and active however, with many competing demands on staff time, not all staff see outreach activity as a priority.

**6. Partnerships with industry**

**Interactions with industry:** *Summarise how the School will strengthen involvement with industry in programme development and delivery of abilities and skills; work related learning and placements for students and mobility of staff between university and industry; innovation and entrepreneurship (including technology and knowledge transfer activities, start-ups and spin-outs)*

The School has recently re-launched its Informatics Industry Advisory Board, with the first meeting of the reconstituted board taking place in December 2018. The board will meet bi-annually, focusing alternately on research and education. The existing and prospective Centres for Doctoral Training hosted by the School also have their own sector-specific industry engagement boards and substantial funding pledges were received from industry partners in support of the School's recent CDT bids.

The School is a major partner in the Bayes Centre, including managing the Bayes industry engagement programme, alongside the School's own business development activity. The Bayes Centre provides further opportunities to co-locate with industry research and development teams and to build industry partnerships.

In addition to its involvement in the Bayes Centre, the School has its own business incubator units (on level 8 of Appleton Tower) and has a strong track record in business start-ups, spin-outs and knowledge transfer.

The development of Graduate Apprenticeships, strengthens links with industry partners and provides an alternative route into higher education and employment for UK domicile students.

**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (e.g. will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)
Continued development of Informatics Industry Advisory Board as a channel for engagement with industry partners.	Continued development of Informatics Industry Advisory Board as a channel for engagement with industry partners.	Continued development of Informatics Industry Advisory Board as a channel for engagement with industry partners.
Renewed emphasis on staff and student entrepreneurship with revised programme of activities, including in conjunction with Edinburgh Enterprise and Launch.ed.	Further development of a programme of activities to encourage staff and student entrepreneurship.	Continued development of a programme of activities to encourage staff and student entrepreneurship.
Continuation of Informatics Ventures programme of entrepreneurship, technology business development and business investment programmes, including EIE (Engage, Invest, Exploit) and business accelerators, through the Bayes Innovation Programme – ‘Project A’.	Continuation of Informatics Ventures programme of entrepreneurship, technology business development and business investment programmes, including EIE (Engage, Invest, Exploit) and business accelerators, through the Bayes Innovation Programme – ‘Project A’ (to December 2020).	
Development of a sustainable successor programme to BIP – Project A to maintain and continue to develop EIE, business accelerators and related activities, beyond December 2020.	Securing and implementation of a sustainable successor programme to BIP – Project A.	Further development and implementation of BIP – Project A successor programme.

**Risks:** *to the delivery of the strategy and priorities described above.*

- Lack of space for increasing demand for industry sponsored research labs.
- Poaching of staff by industry partners (who are able to offer substantially higher salaries).
- If the School is to continue to support Graduate Apprenticeships, there needs to be clarity as to how this relates to the School’s overall undergraduate intake and a sustainable financial model which fully compensates the School for the cost of development and delivery and which recognises the opportunity cost, in the context of finite capacity.

## 7. Digital transformation and data:

**Data science:** *Summarise how the School will contribute to making us the leading centre for Artificial Intelligence in the UK, as well as “the data capital of Europe”.*

Data science is core School business and the School contributes directly through its own research, education and knowledge transfer activities, but also through partnering with other Schools and Colleges in joint initiatives. Research staff trained within the School of Informatics move on to positions elsewhere within the University, taking with them their knowledge and skills and disseminating practice in data gathering, management, transformation, communication and application.

**Digital transformation and data:** *Summarise how the School will contribute to drive a culture of evidence and predictive decision-making within our own practices and the application of SEP principles.*

The School is collaborating with College and other CSE Schools in making available and accessible more relevant and valid management information to aid planning and decision-making.

**City Deal:** Describe what you plan to do to contribute to the City Deal objectives and deliverables over the period of the plan under the DDI themes

### Talent:

The School is a major contributor of talent in Data Science, Artificial Intelligence and related disciplines. The School has some existing distance learning provision and has developed a graduate apprenticeship programme (available from 2018/19). Further developments in these areas, including ‘micro-masters’ and similar bite-size provision, have the potential to open access to those not in a position or wishing to enter full-time higher education. The Centres for Doctoral Training hosted by the School are major contributors of doctoral-level talent development.

**Research:**

Much of the School’s research is directly relevant to Data-Driven Innovation and, as well as continuing its focus on foundational research, the School is increasingly engaged in translational activity, including in collaboration with industry partners and with industry funding.

**Adoption:**

The School will continue to develop existing and new industry partnerships, including with industry partners within and linked to the Bayes Centre community, in order to promote adoption and commercialisation of the School’s research. The School has a dedicated commercialisation and business development team with a strong track record of commercialisation of intellectual property. The School is also working with a number of public sector partners in the application of data science and artificial intelligence to enhance delivery of public services.

**Data:**

Collection, management, transformation, communication and application of data are core to informatics and the School has recently created a new role of Senior Data Scientist to help promote the most current advanced techniques, tools and practice in the use of data, both within the School and more widely. The School will work with public and third sector partners, in particular, in helping them to extract value from their datasets, including to improve efficiency and service delivery. The proposed data clinic will assist small charitable, community and voluntary organisations with limited resources.

**Entrepreneurship & Innovation:**

The School has a well-established Commercialisation and Industry Engagement function which has a strong track record in business start-ups and spin-outs. Through Informatics Ventures, the School stages the annual, high profile, *Engage, Invest, Exploit* technology investment showcase, which attracts venture capitalists from throughout the UK and internationally. The School Commercialisation and Industry Engagement team has responsibility also for the Scottish Enterprise supported Bayes Innovation Programme, including its business accelerator programme, the latter run in conjunction with WAYRA and supported by Telefonica and CISCO for 2019. Given the overlap, and shared constituencies, of the School and the Bayes Centre in the areas of Data Science and Artificial Intelligence, close integration of the commercialisation and business development functions of both entities is essential, in order to avoid inefficiencies and, even more importantly, confusion and duplication amongst industry partners and other stakeholders.

**Specific annual key priorities and associated measurements of success:** *Include measurements of success for each priority and describe, if the cost is material, how you will resource this action from within the School budget envelope (e.g. will you stop doing other activities, or is the budget envelope increased because of this activity). The full costs of all activity associated with these priorities must be included in the Finance Template.*

Actions are embedded elsewhere within this plan and, therefore, not separately articulated, below.

Year 1 (19/20)	Year 2 (20/21)	Year 3 (21/22)

**Risks:** *to the delivery of the strategy and priorities described above.*

Additional activity related to City Deal and DDI must be adequately resourced without the need for overly time-consuming or bureaucratic processes in order to access funding for such initiatives.

**8. Our staff and ways of working**

**School vision for its staff and ways of working:** *e.g. Numbers and type of staff (T, T&R and R, plus guaranteed hour staff) and sub-types of support staff; Consider any changes to organisational structure and identify key focus for improving ways of working within School; developing appropriate succession planning, staff support and mentoring; equality of opportunity; specific themes from the staff survey to address.*

Following a period of rapid and substantial growth which has not seen proportionate investment in support staff, the School needs to invest in further support staff roles across a number of areas, in order to maintain services and support to academic staff and students.

The School continues to refine its work allocation model, to improve the equity and transparency of the distribution of teaching and admin duties amongst academic staff.

The School is undertaking a review of academic line management (all academic staff currently are line managed by the Head of School) with an intent to introduce a new structure with effect from academic year 2019/20.



Other priorities (based on feedback from the staff survey) are further support and training for the performance and development review (P&DR) process and more support for staff development.

The School is due to renew its Athena SWAN Silver accreditation in 2020 and will review and refresh its approach to equality and diversity as a part of that process.

**Risks:** *e.g. appropriate skills to implement City Deal priorities and deliverables while maintaining core business capacity and student experience.*

Academic staff are operating at full capacity and beyond. New initiatives (City Deal, Data Driven Innovation, Distance Education, etc.) will require additional resources and there cannot be an expectation that the deliverables will be achieved without such investment.

Service Excellence may deliver medium to long term benefits to the University, but in the immediate term it places additional demands upon staff, increases uncertainty and makes workforce planning and staff retention more challenging. There is also a perception amongst many staff that investment in SEP is at the expense of investment in systems (eg EUCLID) that impact on staff experience, currently, in their day-to-day work ('business-as-usual'). This adds to antagonism towards SEP.

Further investment is required in leadership and management development for both academic and professional services staff. There is a lack of support and incentive for academic staff (in particular) to take on senior leadership and management roles.

## 9. Finance

**What are the financial implications of the ambitions of this document?** *Describe how the plan affects your contribution trend over the three years and the future capacity for generating contribution.*

*This section should clearly articulate the release/repurposing of resource as part of SEP benefit realisation.*

The financial forecasts reflect 'business as usual' plus the impact of investments already made over recent years and others included in the School's 2018-21 planning submission, but yet to be brought to fruition.

The 2019-22 plan envisages a period of consolidation – perhaps best described as the School 'catching breath' – with further 'catch-up' investment in support roles and only modest growth in new academic posts. This to be followed by a small number of strategic investments in new areas of research and teaching through recruitment of new research groups, to be led by new chair appointments. Whilst planning for these has already started, given the inevitable lead time, the financial impact of these, if approved, will only begin to be seen towards the end of the current planning period.

At this stage there is a lack of clarity how SEP will impact on the School and on its staff and its resourcing. The School sees the biggest potential gains coming from improved processes and systems and better access to information. The School will review its resourcing needs in the light of such gains with a view to identifying opportunities to improve services to staff and to students and to improve efficiency. Such gains will be limited by the absence of investment in EUCLID (or its replacement) and related systems, which have the greatest impact on academic staff and students as well as on professional services staff in student services.

**Contribution profile:** *Identify how the plan is impacting on income and expenditure and the future capacity for generating contribution.*

At Q2 2018/19, the School's contribution profile shows positive variances to previous forecasts over the planning period, indicating scope for further investment in support roles in order to address the demands on professional services staff created by recent significant increases in academic staff and student numbers.

There is also the scope to make a limited number of targeted strategic investments in academic staff, to continue to build the School's research and teaching capacity in targeted areas which will further increase income, over the medium to longer term.

**Risks:** *Identify key financial risks to the School – e.g. decline in research income / rising costs of recruiting senior professors.*

- Brexit.
- Loss of access to EU funding sources for research.
- Any potential change to Higher Education fee regime within the Rest of the United Kingdom.
- Loss of access to School reserves for local capital projects to improve efficiency of space usage and update facilities.
- Service Excellence – potential impact on staffing within School is unknown and therefore unquantified. There is a risk that the School loses the resources and flexibility of deployment of its resources to meet fluctuating and changing demands. A move to centralisation of functions and services (defined by service level agreements or similar) may, in some instances, result in a loss of responsiveness and consequent impact on service to staff and students and an inability to respond to opportunities.
- Cost of recruitment to grade UE10 academic roles in an increasing competitive recruitment market (especially with respect to industry and overseas universities (e.g. US, China).

## 10. Physical and digital infrastructure

### School Requirements for its physical and digital infrastructure

**You MUST follow all procurement policies and procedures when planning for large purchases**

<https://www.ed.ac.uk/procurement/policies-procedures>

*Highlight key elements of investment in Estates projects and digital infrastructure projects that are essential to the delivery of the plan and would have a material negative impact on you realising the plan if they were delayed. Describe the impact of any delays.*

Although the School anticipates more modest growth than in recent years, space is a particular and continuing challenge including:

- Additional academic staff offices to accommodate current and planned new hires.
- Additional space for practical research and teaching labs (for which there is a growing demand), including industry sponsored labs.
- Additional space (with cooling) to accommodate servers and compute capacity (see below) to meet the increasing demand from staff and students (research and taught).

The School has taken a number of steps to address the above within its existing estate, however opportunities for further space reconfiguration are now very limited.

Projects under planning or consideration to provide additional space and/or improve space utilisation include:

- Increased density of occupation in Informatics spaces within the Bayes Centre.
- Increased density of occupation within internal offices within the Informatics Forum – however this will require investment in improved ventilation which is currently being investigated, with a potentially substantial cost.
- Conversion of redundant spaces in Appleton Tower basement to create new student workshop facilities and research lab space.
- Potential reconfiguration of Appleton Tower level 8 (currently research labs and business incubators) to provide additional computing teaching labs and tutorial rooms.

The School has been working on the basis that its reserves will provide all or some of the funding for the above projects.

The School is increasing its compute capacity (e.g. GPUs) to meet growing demand from staff and students and continuing investment will be necessary over the planning period, in hardware, space and staff support for further additional server and compute capacity.

Investment is required in the University IT network to improve resilience and capacity.

Investment is required in University systems (especially EUCLID) beyond that currently planned for Finance and Human Resources. EUCLID in particular is the source of much inefficiency and frustration for both academic and professional services staff (the latter especially in teaching organisations). Investment is required in interfaces between, and integration of, on-line systems.

The Informatics Forum un-interruptible power supply (UPS) is over 10 years old and unreliable and very energy inefficient. It must be replaced urgently.