LONDON'S GLOBAL UNIVERSITY

Faculty of Life Sciences

2018-23 Planning

Page 1 - 16 Strategic Operating Plan

Appendix A: Detailed student and staff projections
Appendix B: Detailed financial projections

Version: 4.1
Date: 14 August 2018

1. Executive Summary

The Faculty of Life Sciences searches for the answers to the most enduring and important questions about life on earth. We seek to tackle and solve some of the most urgent problems that face humans and other animals by teaching and training the next generation; by delivering the highest quality research; and by having impact on both society and the wider world.

Current financial position

- We have been financially sustainable since 2017, with an increase in our contribution from £23.5M (11/12) to current forecast £32.8M. Future growth in contribution is now slowing to trend.

- We have no projects in the current capital plan and investment in our estate is restricted to minor works. We identify this as a significant medium-term risk for academic excellence.

- Strict cost controls established in previous years have been broadly maintained. Further progress in e.g. platform technology cost recovery and overhead recovery beyond research portfolio adjustment will require central (or School level) investment.

Current academic position

- Indicators of research excellence remain positive, with current year academic recruitment continuing to attract exceptionally high-quality individuals in an international market including new leadership for Cell & Developmental Biology (recruitment concluding), a new Director for the Gatsby Computational Neuroscience Unit, Chairs in Open Drug Discovery and Neuroscience plus an Associate Professor in nerve regeneration to build high quality research capacity in School of Pharmacy.

- Indicators of undergraduate teaching excellence are mixed due to a change in the NSS and variable turnout in 2017. Our PRES performance is an issue identified in our 17/18 operating plan and actions are ongoing to address this. We continue to have success operating some of the largest Doctoral Training Programmes at UCL. These include the NERC DTP (with MAPS & SLASH), the BBSRC LiDO (where we lead a consortium of six London institutions), the MRC DTP (joint with Birkbeck, the largest in the UK) and Wellcome Clinical PhD and Wellcome Neuroscience PhD programmes. These continue to attract additional academic investment e.g. 10 new NPIF studentships in 2017 for the MRC DTP.

- A new Centre for Life's Origin and Evolution opened in 2017, reflecting our wish for new investment to focus on 'frontier' or interdisciplinary areas of Life Sciences. The Institute for the Physics of Living Systems (with MAPS) continues to flourish; our engagement with the Francis Crick Institute is strong and we are playing a role in the leadership team delivering UCL's engagement with the Rosalind Franklin Institute.

- We continue to consolidate platform technologies, with a new Centre for Imaging opening in 2017 bringing together FLS and FBS cellular imaging. We have world-leading expertise in cellular microscopy and excellent platforms to deliver quantitative skills training in biology more broadly, reflecting discipline trends globally. Availability of RPIF monies has partially addressed concerns over medium term investment in capital equipment, but demand still significantly exceeds capacity to finance.

Forward plans

- We will hit our budget targets in 2018/19 but subsequent years present minor challenge principally due to the shortfall in student income created by the Government's decision to freeze student tuition fees. We are responding to this by increasing unregulated fees above inflation, although our ability to do this is limited by most being at the top of their respective markets already; and by creating a five year MPharm degree incorporating a preregistration year to target overseas markets.

- Staff headcount dipped in 2017 due to gapping and delayed academic recruitment. This impacted on research income (behind target ~£1M 17/18) indicating that our Faculty is now very 'lean' academically. Headcount is now planned to return to its trend level and will increase due to planned transition of MRC LMCB staff from research to core as the LMCB adapts to closure of the Unit in 2023.

- We will continue and complete planned senior academic recruitment in plant biology in 2018, providing a focus for future developments. 2018 will be a year of transition in the leadership team as a new Head of Cell and Developmental Biology will commence in post while an international search for a new MRC LMCB Director and the Head of the Birkbeck-UCL Institute of Structural and Molecular Biology will commence.

- We wish to begin investing in Biology & Computing as a unifying (and cross-Faculty) theme. This will bring together activities where we identify the potential for major academic impact and that connect to the Nature Smart Cities development at UCL East in 2021.

Biology & Computing strategy overview

- We are developing an ambitious long-term strategy for our future development, building on current strengths and growing UCL's competence in computational biology. This will ultimately help coordinate and align the core expertise of our Faculty in Bioinformatics (we host the UCL Genetics Institute), in light microscopy (where LMCB has world leading computational and technical expertise in the design and use of new instruments), in neuroscience (where computational approaches to 'big data' in CoMPLEX, the SWC and NPP are increasingly prevalent), in biodiversity and conservation (where HPC usage in modelling of 'one health' and biodiversity is now widely used) and connect in two years to our Nature-Smart Cities investment in UCL East.

- The first proposed step is to invest in two new academic posts that will establish core expertise in 'big genetic data' analysis, develop state of the art computational infrastructure for Biosciences and provide our students with the necessary research-led undergraduate teaching and Masters training to succeed in a field which is becoming increasingly data driven and computational.

- The proposed posts will be based in the UCL Genetics Institute (UGI). If approved, they will leverage the recent BBSRC computational infrastructure award to UGI (supported by additional investment from UCL ISD in networking) to develop new bioinformatic research areas in microbial genomics (linking to the UCL Food, Metabolism and Society domain and Microbiology@UCL) and will develop fundamental research in bioinformatics, supporting a wide range of activity across UCL.

- This development will be accompanied by planned introduction of a new MSci pathway 'Computational Biology' within the Biological Sciences degree programme (from 2018), a new stream in Computational Genomics within the MSc Genetics of Human Disease, new modules in Computational Microbial Genomics in Biological Sciences and changes to the joint Masters programmes with NHM/ZSL. If approved, we will seek modest expansion of student numbers in these areas from 2019.

- Following approval of this initial investment, we will further develop the Biology & Computing theme to incorporate targeted investment in future years into cognate areas, linking to the Nature-Smart Cities focus in the UCL East development that will begin to appear in our budget planning from next year.

- The total investment requested is small. Projected expenditure is £55/711/850K in 18/19/20 with income of £0/796/1096K. This will reduce our planned contribution by 0/0.1/0.1 percent, with a financial impact of £-55/+86/+246K, in each of the planning years (these projections have not been included in the Budget submission).

Faculty of Life Sciences

Staff, Student and Financial Summary

	16-17 Actual	17-18 Budget	17-18 F1	18/19 Projection	19/20 Projection	20/21 Projection
Staff (FTE)						
Academic	190	204	192	205	209	212
Research	345	390	378	375	378	375
Support Services	207	216	211	220	220	220
Total	**742**	**810**	**782**	**799**	**807**	**807**
Students (FTE Load)						
UG	2,284	2,219	2,342	2,325	2,287	2,258
PGT	300	444	430	411	380	382
PGR	477	494	446	429	429	429
Total	**3,061**	**3,156**	**3,218**	**3,165**	**3,096**	**3,069**
Financials (£m)						
Income	103.8	115.7	112.4	113.8	116.5	118.8
Expenditure	73.1	81.8	79.5	81.5	83.7	85.5
Contribution (£m)	**30.7**	**33.8**	**32.9**	**32.3**	**32.8**	**33.3**
Contribution %	**29.6%**	**29.2%**	**29.2%**	**28.4%**	**28.1%**	**28.0%**
Target Contribution (%)				**28.3%**	**28.9%**	**28.9%**
Variance (%)				**0.1%**	**-0.8%**	**-0.9%**

Key Actions Summary

	Faculty of Life Sciences		
Key Actions	2018/19	2019/20	2020-21
Improve student experience and pedagogy	• Launch new MSci streams • Develop new Biology & Computing • Renew major DTPs • Plan QEOP degrees • Deliver 5 year MPharm • Execute New Giza project • Establish demand for CTFU capacity	• Recruit QEOP Faculty and commence degree recruitment • Grow Life Learning activity • Execute New Giza project • Deliver 5 year MPharm • Plan CTFU capacity enhancement • Address BME attainment gap	• Commence QEOP courses • Deliver 5 year MPharm • Deliver CTFU capacity enhancement • Address BME attainment gap • Grow Life Learning activity
Deliver research excellence through a sustained focus on quality	• Execute transition plan for LMCB & recruit new Director • Recruit new SMB leadership • Recruit new iPL Director • Establish new GCNU governance • Deliver Doctoral Education strategy • Establish REF2021 working groups	• Develop LMCB post-QQ strategy • Deliver Doctoral Education strategy • Complete SWC Group Leader recruitment • Write REF2021 impact case studies and finalise output selection	• Commence Nature-Smart Cities research programme • Prepare for SWC QQR • Complete REF2021 delivery
Create state-of-the-art core technology platforms	• Establish BSU change programme • Engage with RFI on technology platforms • Develop research computing strategy • Improve cost-recovery and financial transparency of platform technologies	• Complete BSU change programme • Develop RFI technology platforms • Improve cost-recovery and financial transparency of platform technologies	• Complete BSU change programme • Evaluate usage of RFI technology platforms • Develop new sustainable technology platforms to maintain academic environment
Invest sustainably in interdisciplinary research and teaching	• Secure sustainable funding for Metabolism & Society @ UCL • Develop joint venture with ZSL/IoZ • Detailed planning and execution of QEOP • Complete plant science recruitment	• Secure major funding for Plant Science • Secure funding for joint venture with ZSL/IoZ • Secure major funding for Open Drug Discovery	• Move onto QEOP site • Deliver joint venture with ZSL/IoZ

2. Vision

Our Faculty searches for the answers to some of the most enduring and important questions about life on earth; and in doing so seeks to tackle and solve some the most urgent problems that face humans and other animals. These questions include: how did life on earth begin and evolve? What links human and animal health and the environment? How do cells work? How does evolution shape the genome? How do organisms develop? How do neural circuits create behaviour? How can we develop novel drugs?

In pursuing our vision, academic creativity is very important to us. The Faculty exists only to support the academic mission. We use open approaches, sharing data and seeking to engage and empower all our staff through transparent approaches to science, teaching and leadership. We build relationships across disciplinary boundaries and seek power to deliver our vision through connection rather than hierarchy in a large and complex institution.

Our Faculty now demonstrates a consistently high and increasing level of academic excellence and is performing at a high level both academically and financially relative to benchmarks. A relentless focus on cost control over the last five years has delivered major growth (more than doubling) our contribution, underpinning the SLMS growth overall during that period. Our academic excellence must now be consolidated and diversified. By 2022 we will be recognized not only for our core academic excellence, but for an increasing academic (i.e. both teaching & research) focus on emerging 'frontier' and interdisciplinary areas of the Life Sciences, including (but not restricted to):

- Investigating the origins and evolution of life on earth
- Understanding the physics of living systems and how they constrain cell and tissue behaviour
- Understanding cells as macromolecular machines
- Understanding how neuronal circuits mediate cognition and behaviour
- A global focus on biodiversity & environmental research
- A step change in drug discovery and therapeutic innovation
- A world-leader in cell and tissue imaging technology & development

Our strategy for delivering this is to:

- secure capital investment for refurbishing high-quality laboratory or teaching space that brings together individuals from cognate areas to work together on these topics
- recruit exceptional academic staff from a global talent pool who will connect across sub-disciplines and to other Faculties and areas
- develop innovative programmes of teaching and learning that are at the forefront of their disciplines
- foster the technical and quantitative underpinnings of biological and pharmacological research through selective investment in key technologies and model organisms

In the current planning period we will start to focus actively on Biology & Computing as an emerging interdisciplinary area of significance that aligns well with our plans for Nature-Smart Cities on the UCL East development. By 2021 we will be recognized for:

- Universal academic excellence and a top 3 REF 2021 performance
- Consistently excellent subject-specific TEF delivered through innovative research-embedded teaching
- World-leading research in the key model organisms for our discipline
- State-of-the-art platform technologies
- Empowered and engaged staff at all levels who love working in FLS
- Pervasive engagement across UCL, particularly with MAPS and Medical Sciences
- A leader in scientific collaboration with the Francis Crick and Rosalind Franklin Institutes

3. External environment

The consequences of Brexit continue to be the overriding external issue to contend with in the planning period. We analyse the principal threats and opportunities to FLS as follows:

- **Research**. Research income will diminish after exit from the European Union if access to Horizon 2020 is not maintained. This threatens research volume and subsequent impact (including the REF). Our plans respond by focusing on the window of opportunity that remains in the two years prior to Brexit to

maximise our volume of ERC and Horizon 2020 opportunities; by ensuring FLS participates vigorously in developing alternative funding streams such as the current focus of RCUK on ODA-compliant research; and by ensuring FLS is able to respond rapidly to the new Industrial Strategy and funding opportunities. We have referenced this in budget projections by adopting a more conservative approach to research funding growth.

- **Teaching**. The primary threat is a diminution in teaching income threatening financial sustainability of the Faculty. We are responding to this by (a) increasing our efforts in outreach to UK populations; we would be particularly interested in working (perhaps in collaboration with IoE) on developing Foundation courses or exploring alternative qualification routes to entry (b) pivoting to PGT where there is European demand driven by depreciation of sterling, keeping overall student numbers constant (c) reinforcing our engagement with critical overseas markets. We have referenced this in our budget projections by reducing planned EU student recruitment and increasing targets for non-EU overseas students.

- **People**. The environment around Brexit has caused anxiety to significant numbers of staff and students. This has been well mitigated in the past year by institutional activity and we note that recent academic recruitment has attracted excellent EU applicants. We will need to construct a handful of bespoke solutions for key members of staff and these are factored into the budget.

Non-Brexit related opportunities

- **MPharm.** Over-capacity in the UK MPharm market remains and has been driven by entry of lower tariff providers. Many appear to struggle to attract quality applicants and all apart from UCL entered clearing in 2017. Our strategy is to maintain our current quality and improve our student experience, if necessary reducing overall cohort size and (in 19/20) creating a five year course incorporating the pre-registration year (maximising appeal to overseas target markets). We are also compensating for teaching income by increasing School of Pharmacy PGT quality and volume, maintaining overall numbers. Evidence thus far suggests 'flight to quality' when courses are under pressure and we believe our approach will minimise impact on our sustainability; we anticipate lower tariff providers may exit the market after Brexit.

- **Industrial strategy.** The new Government Life Sciences Strategy and Industrial Strategy has resulted in an increasing number of short notice high value calls for funding including National Productivity Investment Fund studentships, GCRF calls and other initiatives. These are generally coordinated well by OVPR and our Research Facilitators but it has been challenging to develop an integrated strategy and the demands on senior management time responding to these calls are significant.

- **ODA/GCRF**. The UKRI initiative to invest in ODA-compliant research through a variety of mechanisms opens up opportunities to develop academic initiatives in relevant areas that have sometimes been neglected in FLS. We are currently developing ODA-compliant work to target agriculture and bioinformatics, drinking water contamination biosensors and fake pharmaceuticals.

- **Life learning**. Significant opportunities are emerging in tendering of major contracts for e.g. life learning for practising pharmacists, including independent prescribing. These are often short notice high value calls from Health Education England but effective partnering with UCL Consultants has provided valuable bid assistance. The UCL School of Pharmacy is aiming to take a UK leadership position in this area.

4. Objectives and actions

Our overarching objective is to deliver a high and uniform emphasis on quality associated with UCL core values leading to academic excellence and global impact in a financially sustainable. FLS activities already have broad engagement across UCL2034 Principal Themes and align well with them.

REF2021 readiness

- We anticipate submitting in UoA5 and UoA3b. Impact leads have been appointed for each UoA and overall UoA leads are being appointed. Key REF decisions have been communicated and discussed in the Faculty Leadership team.

- Performance in REF2014 was good (UoA5 4*/3* percentage 46/36% & UoA3b 47/40% rising from 15/40 and 25/40% in 2008) and subsequent successful 2017 QQR of the UCL/MRC Laboratory for Molecular Cell Biology (LMCB) and successful 2015 Gatsby Computational Neuroscience Unit QQR provide confidence that quality has been maintained or increased; this is consistent with the rise in QS World Rankings (a research-weighted index) for our Faculty (Life Sciences entering the top ten for the first time in 2018; we remain in the top ten for Pharmacy & Pharmacology).

- Birkbeck College have confirmed their wish – as in REF2014 – to jointly submit to UoA5 with UCL. UCL Dentistry have confirmed their current intention to submit a separate return to UoA3b from UCL Pharmacy. These decisions will need to be ratified by our internal Main Panel A Working Group which will convene in April 2018

- Open Access compliance is high (86%, the highest in UCL) and we are targeting >90%; preliminary work on impact case studies suggests sufficient potential case studies identified for REF2021.

KEF readiness

- Currently we have little information about KEF format. Our emphasis will be on working with UCL Innovation & Enterprise to understand our HEBCIS data return which appears inaccurate.

Objectives

We now seek to further increase quality within the cost control envelope established over the last four years, and to deliver new investment in Biology and Computing as an initial step towards Nature Smart Cities in UCL East Our vision is challenging to deliver and will require continuous competitive innovation within a changing external landscape. Our key objectives are:

Objective	Strategy reference	Actions
Increase quality and global impact of our research		
Develop productive scientific relationships with the Francis Crick and Rosalind Franklin Institutes	PT-1,2, KE-C,D	• Engage fully in relevant themes (biological mass spectroscopy, correlated imaging, next generation chemistry for health, structural biology) in the initial phases of the Rosalind Franklin Institute • Identify and support new satellites and secondments for Francis Crick Institute building on existing (good) engagement • Ensure external grant funding underwriting all joint appointments
Ensure SWC/GCNU is the best centre in the world for neural circuits & behaviour research	PT-1,2 KE-D,E	• Complete recruitment of SWC Group Leaders • Facilitate integration of GCNU with SWC • Build strong partnerships and activities between the SWC/GCNU and other FLS (or SLMS) neuroscientists
Establish FLS as the UCL hub for therapeutic discovery	PT-1, PT-2, PT-3, PT-6, KE-A	• Launch Open Drug Discovery with new Chair for SoP • Develop and launch new Life Learning courses in Drug Discovery • Select impact case studies for REF and commence evidence gathering

Support cell biology in the Faculty and beyond	PT- 1,2,3 KE-C,E	• Recruit new LMCB Director & SMB HoRD/ISMB Director • Support transition of LMCB to external response-mode funding • Work with MRC to ensure effective post-QQ transition • Complete recruitment of new Cell & Developmental Biology Research Department leadership, with appropriate laboratory refurbishment • Explore opportunities for greater integration/collaboration between LMCB & Cell & Developmental Biology Research Department. • Recruit new Director for Institute for Physics of Living Systems initiative [with MAPS] and establish links with FCI
Establish FLS as a leader in cross-disciplinary research & teaching within UCL	PT-1, 2, 3, 4, 5, 6 KE-1,A, C, D, E, F	• Develop new cross-UCL Metabolism & Society @UCL activity to become self-sustaining • Develop new Biology & Computing courses (with CS) • Develop bioinformatics capability and capacity • Support re-establishment of plant sciences • Plan for Nature Smart Cities on QEOP site • Initiate at least one major joint project with Zoological Society of London/Institute of Zoology in the 'One Health' area
Ensure sustainable access to state-of-the-art Life Sciences technology platforms and model organisms	PT-1,2,3,KE-1	• Embed imaging technology in our research-embedded teaching at MSci and MSc/MRes/PhD levels • Following LMCB renewal, secure increased level of science platform development funding from external sources. • Contribute to BSU transition plan and support P-Block developments • Renew fish facility tanks and flooring
Increase volume and quality of research activity associated with the School of Pharmacy	PT-1, 2, 3, KE-1	• Support transition of new recruits in Drug Discovery, Regenerative Medicine and Translational Neuroscience to connect with the Translational Research Office and other Faculties • Engage fully with SLMS Research Facilitators • Improve overhead recovery from industrial grants and tackle conflict of interests • Improve volume of 4* research outputs • Planned relocation of activity within BMA House to maximise research interactions
Increase quality of our education & training		
Develop research-embedded teaching and make pervasive throughout FLS	PT-1,2, KE-A,B,C	• Develop newly implemented Cell Biology MSci stream • Grow Biochemistry, Molecular Biology & Biotechnology MSci • Review supply & demand of research-embedded teaching provision at CTFU and develop capital plan • Develop group research projects for MSci streams
Deliver a UK-leading MPharm degree	PT-2, 3, KE-A	• Develop 5-year MPharm degree incorporating pre-registration training. • Improve overseas marketing
Promote culture of universal pedagogy	PT-2, 3, KE-A	• Increase engagement with UCL Arena • Increase proportion of staff with Higher Education Academy qualifications

		• Develop joint project with UCL Institute of Education for undergraduate pharmacy students • Roll out postdoctoral accreditation scheme for teaching
Enhance and ensure sustainability of FLS Doctoral Training Programmes	PT- 2, KE-A	• Further develop MRC Doctoral Training Programme across SLMS and develop specific skills training programme • Enhance integration between BBSRC, NERC and MRC DTPs hosted in FLS and with EPSRC DTPs hosted in BEAMS
Establish new and sustainable high quality international collaborations in Life Sciences	PT-1,2,3,6, KE-A	• Complete New Giza project (Pharmacy & Medical School) and explore similar possibilities in UAE & Saudi Arabia • Develop new China strategy around China Pharmaceutical University • Develop partnership with Chulabhorn Research & Graduate Institutes
Consolidate and improve Masters programme provision	PT- 2, KE-A	• Address recruitment or terminate courses with fewer than 20 students unless strong academic justification. • Increase attendance at international recruitment fairs (targeting specific sectors e.g. Singapore) • Increase promotional activity through continued use of video, subject-specific brochures and engagement with International Office's Hobson's Connect system
Deliver impact through developing Life Learning	PT-2, 3, KE-A	• Partner with UCL Life Learning to develop drug discovery portfolio of Life Learning activity • Develop Independent Prescribing Life Learning activities via School of Pharmacy • Support SysMIC to develop Life Learning offering.
Increase quality of academic and professional services leadership		
Make sustained progress in equalities and diversity	PT-2, 5; KE-A, B	• Promote Athena SWAN in GCNU/SWC. Support all Divisions/Institute achieving at least Silver in planning period • Improve BME mentoring in all teams at all levels • Address BME attainment gap through working with the BMA attainment project group • Promote inclusivity in all Faculty events and projects
Develop all staff	PT 1-6, KE-A,B,D	• Further develop high-quality staff appraisals • Active participation in leadership training • Focus on respectful workplace and mental health support/training • Engage fully with TOPS process at all levels

5. Staffing

Our overarching goal is to improve the quality of all our staff (academic, research, teaching and professional services) consistent with UCL core values in order to deliver excellence at a similar shape and size. This year we have seen indications (e.g. failure to meet research income target by ~£1M) that gapping and headcount reduction in previous years are now directly impacting on academic excellence, so plan to return to trend headcount in academic staff (please note the current figures are also impacted by planned transfer of MRC LMCB staff onto core as the planned transition away from MRC Unit status continues).

Staff morale, mental health/stress & work/life balance

- **Staff survey**. The 2017 Staff Survey demonstrates that our focus on fairness and respect in the workplace has paid dividends in terms of improvements in questions eliciting staff opinions in these areas. We will continue such a focus. A new theme emerging in that survey is that of staff feeling an increased sense of belonging to their Faculty but relatively disconnected from UCL2034. While the former is welcome, the latter is potentially destabilising. We are responding to this by increasing emphasis on communication, dialogue and explanation between the leadership team(s) and staff; and continuing to emphasise and encourage greater dialogue between professional services and academic, research and teaching staff.

- **Mental health/stress**. Our staff report high levels of stress or pressure in the workplace, and neutral scores in the Staff Survey indicate a lack of awareness of support. There is also significant concern about high levels of stress and mental health problems in our student cohorts that affect staff. Our plans address this by explicitly rolling out 'mental health toolkit' training throughout the Faculty and emphasising the benefits of mutual support in a diverse workplace. We have now conducted two Faculty mental health workshops with more scheduled.

- **Work/life balance**. As is common in the sector our staff are reporting dissatisfaction with the balance between work and home life and an inability to meet the requirements of our job without regularly working excessive hours. We will address this through modelling behaviours; high profile Athena SWAN (and other) events that celebrate a balanced approach; and an emphasis on quality of approach to academic work thus improving efficiency and freeing up time.

Continue to improve quality of professional services and support staff in their roles

- **Engagement with TOPS**. We have engaged effectively with TOPS and the Faculty Dean is now a member of the TOPS Executive while our Director of Operations is a member of the People Services core design team, as well as being part of the Faculty Design Working Group with other Faculty Directors and Managers. We will continue to engage with TOPS through targeted events and regular communication with staff and the leadership team.
- Technical staff are frequently a neglected group in terms of career development. We wish to increase our focus on developing these individuals and integrating them into Faculty structures. We have engaged with HR in developing apprenticeship schemes within our Cruciform Teaching Facilities Unit, the School of Pharmacy and MRC LMCB.

Develop all staff

- **Performance management.** Appraisal rates are consistently ~90% and our emphasis continues to be on improving quality through training appraisers and introduction of a Faculty guidance document including an additional appraisal checklist. All academic, teaching and research staff are now assessed for promotion every year and Faculty-wide transparent and standard procedures are implemented. At a central level we monitor performance of any new hires against business plan for a minimum of two years. We also have a Faculty led process for consideration of reward arrangements for all levels and categories of our staff.

- **Address key issues for postdoctoral research staff.** The PRES survey indicates some concerns over career progression, career advice and transferable skills training in this cohort. We are focusing on quality of training and experience for this group, including provision of a clear and transparent pathway of support through schemes such as Career Development Fellowships towards personal independence. This will include pathways to support both retention and departure from the Faculty.

- **Leadership training.** We have invested in the Future Leaders programme for the last four years, with successive Life Sciences leaders coming through. We will continue to invest in this programme in a

gender-balanced way, seeking to extend leadership training opportunities to a diverse range of staff including professional services teams.

- **BME staff development and student attainment gap.** We have incorporated additional BME objectives into our Faculty E&D plan; partnered with UCL Law to identify black male students suitable for the Freshfields Stephen Lawrence Scholarship scheme; and nominated several students for the London School Black Child of Achievement Awards. We will appoint a BME Attainment Gap Faculty lead to work with the UCL central group; continue to actively engage with the Liberating My Curriculum initiative, acknowledging the challenges in fundamental biology of this approach, and will work with the Provost's Race Envoy to champion change.

Invest in new academic staff

Our overall approach remains one of restraint. Within Biosciences there will be significant numbers of staff retirements in the planning period, most of which are critical for our teaching excellence (and income). We will meet replacements for retirement through a combination of proleptic appointments and external recruits. Similarly, we also need to recruit replacement staff in other grades and positions where they play mission-critical roles in research or education delivery.

In addition to these planned replacements, we will deliver modest investment (or re-investment where possible) in key interdisciplinary or emerging areas in line with our academic and financial sustainability strategies:

- We will develop new teaching and research capacity preparing for the Nature-Smart Cities programme at QEOP (which will start to appear in our three-year planning horizon from next year).

- We will complete recruitment in plant sciences through a senior appointment as the Quain Professor of Plant Evolutional Biology, re-provisioning teaching in this area and providing an intellectual focus for new growth.

- We will recruit a replacement Chair in Pharmacology & Drug Delivery, and new academic posts in pharmacoepidemiology and medicinal chemistry to link across different Departments.

- The Sainsbury-Wellcome Centre for Neural Circuits and Behaviour will continue to recruit academic staff. These will all be accommodated within existing Estates footprint and are fully cost-recovered through external grant funding.

6. Internal enablers, barriers and operational impact

Our Faculty remains critically dependent on staff and business processes associated with central Professional services to deliver its plan. This dependency has increased since 16/17 due to the maturing of our cost savings efforts that have delivered financial sustainability in the current planning period. Future quality improvement will require improvement in business processes within central services and a significant barrier to future financial sustainability is the lack of management information needed to carry out the next wave of quality improvement. We are investing considerable effort in working with central services at all levels to enable progress and look forward to the operational stages of the TOPS process, acknowledging that progress in the current year has mainly focused on planning and design of TOPS.

Barriers - where we need to do better

- **Estates – business as usual**. We continue to lack effective ways of specifying and prioritising modest projects to enhance 'business as usual' through (for example) refurbishment of 'tired' laboratory space to attract high quality external recruits. We are concerned that the capital plan lacks adequate, transparent mechanisms for incorporating and prioritising small scale projects (£1.5-3M) to improve student experience and/or refurbish current space, with very large projects and a limited number of priorities

'crowding out' medium scale projects that remain important. This barrier impedes our research and teaching excellence.

- **Estates – module selection.** We remain keen for a second year to introduce 'hard caps' on modules but our suggestions to improve student experience by allowing for module selection in the year before a student takes the module requires SITS development for which Estates and SRS continue to lack capacity. This barrier impacts on our student experience and staff teaching morale.

- **Estates – teaching space provision.** Specialist teaching space provision for laboratory practical work in the Cruciform Teaching Facilities Unit is now at capacity limiting the ability of partner Faculties (e.g. MBBS, AMS degrees) to expand their student numbers, and we have no provision for addressing this deficit in the current capital plan. Specialist teaching provision of large cluster rooms for large-scale teaching is also an issue that we are not easily able to address in the current estates framework. This barrier impedes our ability to work across SLMS to grow successful courses to improve contribution.

- **Research contracts**. Performance has been unsatisfactory throughout much of the current financial year with significant difficulties establishing effective business partnering that are persisting. This represents a significant barrier to securing grant income, collaborative agreements with partners and commercial partnership plus consumes significant time troubleshooting for the leadership team. This barrier impedes our research income, enterprise partnerships and REF impact.

- **Research computing**. Business partnering is excellent and we have established effective local-but-central operations throughout the majority of the Faculty. However, as major users of high performance computing and in the context of developing bioinformatics research and teaching, we will need appropriate central investment in research computing – e.g. HPC, network switches and cabling plus storage for huge datasets – to remain at the leading edge of international research efforts. This barrier impedes our research excellence.

- **Staff morale and communication**. Without the full and enthusiastic engagement of academic, research, teaching and professional services staff we will not realise our vision. These issues were apparent in the 2017 Staff Survey, although not uniform across our Faculty, and are explored further in the 'Staffing' section below. We have an active programme of engagement at a Faculty level to improve the situation.

Enablers - where we have made significant progress

- **Data & Insight – UG admissions**. The new UG admissions tool has been a major step forward in monitoring applications and offers during the present UG cycle, and has facilitated our participation in the student planning round. It demonstrates the huge potential of improved MI to improve timely decision making in business-critical areas. It is now a must-have tool.

- **Human Resources.** Business partnering is now excellent for day-to-day matters and recruitment processes have improved significantly. We are optimistic that the appointment of a new OD Director will provide the opportunity for the development of training (including leadership training) better aligned to our business goals. We wish to see the electronic appraisal system developed to allow a focus on quality and goal setting;

- **Finance**. Our financial reporting and prediction has improved dramatically over the last three years and is well integrated across the School and with central Finance. To make further progress, we require capacity to develop mechanisms to improve cost recovery on platform technologies and deeper analysis of the reasons for large differences in overhead recovery rates within Faculty, sometimes with the same funder.

- **Research Services.** Reporting tools have improved with the recent launch of the UCL Data & Insight PAGS reporting tool which gives significant insight into application 'pipeline', overhead recovery and success

rates across funder and Division/Research Department. To make further progress, we need individual PI level data including direct cost recovery of salary.

7. Assessing performance

We aim to achieve a universally high level of excellence throughout our Faculty, regardless of staff category or operating unit.

Education

- We anticipate a static or improving NSS as improved teaching quality, feedback and research-embedded teaching is balanced by continuing challenge with satisfactory rooming and quality of AV provision
- We are targeting an improved PRES through focus on PG supervision, quality of careers advice and general transferable skills training reflecting the particulars of our PRES feedback
- Employability and SSR are both high and we have no plans to target higher (or lower) levels
- We plan to broadly maintain the balance of our student population with a slight drift towards higher PGR and higher overseas (but significant variability between courses)
- We will target the BME attainment gap through a new Faculty lead working with the UCL project

Research

- We aim to improve quality while maintaining quantity of our research activity. We aim to provide access to an outstanding research environment, resources and facilities to maximize research productivity and impact.
- We target trend growth in research grant income and a sustained level of new research applications at double the targeted research grant income
- PGR student load is highest in SLMS (and 2nd highest in UCL) at 1.7 per eligible FTE (note different definitions of this figure in the KPIs); we have no plans to increase
- Research overheads are the highest in SLMS; we will continue to target further increase where feasible using the new PAGS Data & Insight tool

International

- Partnership working [international consultancy income, type 2 partnerships] is expected to increase particularly through consultancy in the School of Pharmacy, the start of the 'New Giza' project and China Pharmaceutical University project

Staff

- We will target a higher net diversity through Athena SWAN and the Race Chartermark action plan
- We will target a continuing high level of academic and PS staff engagement with TOPS and UCL2034 through promoting bidirectional communication and dialogue
- In addition to the UCL KPIs we will monitor performance of new recruits against business plan

Financial performance & efficiency

- Financial Efficiency [teaching income per academic, research grant income per academic, total staff costs as percentage of total income] are high by external benchmarking (except where noted above) and relative to SLMS peer Faculties. We will seek to maintain these figures while improving research grant income per academic in School of Pharmacy
- Space volume is relatively high, reflecting our major platform technologies and 'wet lab' scientific needs. We will target a reduction of 5% in overall space requirement.
- Space efficiency has improved significantly since 14/15 and we will target contribution per sq M > 1.0

In addition to these measures, our overall assessment of performance will use a combination of quantitative and qualitative sources. We will encourage informal feedback; reflect upon the staff survey, monitor appraisal outcomes and where appropriate pursue exit interviews. This reflects our core belief that academic excellence is hard to capture and therefore relies on multi-source feedback, including a qualitative assessment of performance.

8. Estates

We have a range of unrealised opportunities on and off the Bloomsbury campus that potentially represent excellent ways of delivering greater academic excellence and further improving financial sustainability. A creative approach will be required to prioritise and deliver these projects given some of the operational challenges currently apparent in capital planning.

Bloomsbury campus

- **Mid-scale projects.** Modest refurbishment of some of our existing Bloomsbury research laboratory spaces will be required to maintain academic excellence and accommodate new recruits over the planning period. This is not currently achievable because the minor works budgets are insufficient and the Capital Programme too inflexible to accommodate business-as-usual projects like this, which are likely to be in the range £2-4M. This poses an unmitigated risk to our continued academic and teaching excellence and to our financial sustainability. Without the ability to refurbish laboratories that have reached 'end of life' or that require minor modifications to accommodate incoming recruits, we will be unable to attract high quality international academic staff and will be unable to continue to deliver our teaching. There are also significant opportunities with modest refurbishment to create lively, collaborative and interactive 'open' research environments in contrast to the 'closed doors and corridors' of much of our old estate.

- **Biological Services**. Future provision of high quality Biological Services that meet the needs of our academics is now a significant risk to our future academic excellence, due to fragmented provision of services across Bloomsbury and a high concentration of research that requires animals to be housed close to the procedure rooms where the research is undertaken. There has been poor communication regarding the strategic plans for Biological Services and the Faculty, which has in the past included planning round decisions to close the School of Pharmacy BSU that were not communicated to the Faculty. Communication is now much improved and an external consultancy will be commissioned to examine feasibility options for reconfiguration of the Bloomsbury BSUs in 2018. This remains a partially mitigated risk to our future academic excellence.

- **School of Pharmacy BSU**. There are also major opportunities with BSU development, particularly in the School of Pharmacy where development of BSU capacity is central to the academic mission of the School and its growth in translational neuroscience/gene therapy and regenerative medicine. The School of Pharmacy is evolving to become a hub of expertise for all aspects of the development of medicine, from discovery through to safe administration. The School is establishing disease models for translation that has of necessity changed the use of the BSU, with increased pressure on surgical procedures and behavioural assays. This is currently an unrealised opportunity for research excellence.

- **Platform Technologies**. Our Faculty operates a number of platform technologies (e.g. the fish facility) that have recurrent estates requirements for refurbishment and updating. In addition we need to be able to realise opportunities to consolidate geographically fragmented provision of key technologies, such as we were able to do in 17/18 with the Imaging Centre. Investment can thus unlock not only the best equipment for research but also improve usage and cost recovery.

- **Bloomsbury East Student Hub.** Expanding our provision of high quality student study space remains a priority and the School of Pharmacy plans a student hub for local students in the area, mirroring our previous championing of the Haldane Student Hub on the central Bloomsbury campus. This is a joint project with Library Services to provide ~150 additional study spaces, flexible teaching space for

interprofessional learning (particularly important for Pharmacy/Medical School interaction) and enhanced social space. It will go ahead in 2018.

- **Structural Biology & Birkbeck.** Our Institute for Structural and Molecular Biology is split across two sites at UCL and Birkbeck. The former laboratory space is high quality and has been refurbished in the recent past, but the latter will require upgrading in the planning period. Previous plans for an Institute for Macromolecular Machines were neither feasible nor prioritised within the Capital Plan, but the need and vision remains. We will therefore work towards better coordination with Birkbeck to understand their own capital plans for ISMB and may wish to consider a renewed Institute for Macromolecular Machines bid beyond the current ten-year capital plan.

Off Bloomsbury campus

1. **QEOP.** Planning is well underway for our participation in the Pool Street development as the Nature-Smart Cities project. This will comprise a range of Masters-level courses and a research programme focusing on biodiversity and conservation science in the context of novel sensors, biology & computational approaches to understanding urban biodiversity. The risks and opportunities are well aligned with the main QEOP programme and there is good engagement between the Faculty and the various QEOP academic and professional services planning teams.

2. **ZSL.** Our HEFCE Connected Institution partner ZSL occupies relatively old premises in Regent's Park as part of London Zoo. It has a global academic footprint and partners with us in provision of Masters programmes and research, with shared appointments between FLS and ZSL. ZSL are looking to redevelop (via philanthropic income) their research site and there is an emerging opportunity for UCL to participate in the development of the academic programme. We will explore this in 2018/19 given its proximity to Bloomsbury (short walk), the possibility of additionally partnering with the Royal Veterinary College and the intellectual possibility of addressing ODA-compliant research and teaching such as 'one health'.

9. Stopping and shrinking

- With the change in status of LMCB following the retirement (in two years) of the Director we have re-evaluated whether reconfiguring Faculty structure to enhance the prospects for improving our academic excellence and ensure ongoing sustainability. We have identified the opportunity to align and strengthen cell biology by coordinating the strategy of LMCB, the Research Department of Cell and Developmental Biology and the Research Department of Structural and Molecular Biology.

- One possibility that has been explored informally with staff is to combine all three within a new Division. However, we have also identified significant challenges to realising such a vision in terms of estates investment and professional services headcount increase. Moreover, all three areas are currently recruiting new Heads (Director, LMCB and HoRDs for SMB/ISMB and CDB). We therefore concluded that any reconfiguration was premature and will revisit this question in 2020 following successful recruitment to these senior posts.

- The LMCB will lose its MRC University Unit status at the end of the current QQ (2022). A detailed action plan has been developed (with MRC) to transition Unit staff over to UCL funding, secure response-mode grant funding and develop a cost-recovery model for access to their platform technologies. Execution of this plan brings risks of volatility of research income, some unusual swings in I&E (for example, associated with treatment of the rental for LMCB) and on staff morale. These risks are largely mitigated but in subsequent years the need to transition to a new operating model might result in stopping or shrinking some areas of activity, or a need to significantly increase teaching activity.

- The MPharm degree in the School of Pharmacy continues to face challenges in meeting its recruitment target (at constant quality) due to excess competition in the domestic sector due to overcapacity, volatile