



Dean's White paper

Geraint Rees, Life Sciences

February 2015, version 1.0

DEAN'S WHITE PAPER

This White Paper sets out how I believe the Faculty should develop over the next few years, and an indication of the actions that will be required to achieve this. There are four particularly important areas in which I believe we must make significant progress. They are aligned with and cross-referenced to the six principal themes in the UCL 2034 strategy. These are not the only areas in which we will make progress; but having listened to staff, reflected on our overall institutional goals and experienced life in the Faculty for a term they are the ones I believe are most important to focus on.

WHAT WE WANT TO ACHIEVE

We want to create and sustain a dynamic community of talented, creative, self-starting and highly collaborative individuals who undertake original and world-leading research, teaching and training in the life sciences. We do this not as an end in itself, but in order to transform society for the better by focusing on the most important challenges of our time. Much of our research will be explicitly - and unashamedly - fundamental discovery science but this does not mean we reject translation. Rather we reaffirm the place of fundamental science as critical to effective translation, and remember that translation extends beyond medicine to many other areas.

UCL is London's global university and committed to tackling and solving the most important questions facing the world. So the Faculty will only achieve sustainable world class status if our activities are aligned to the goals of UCL; and if we commit ourselves to work together with the other Faculties to achieve this. It is worth observing that the grand challenges that UCL has set itself to solve have at their heart problems of the biology and science of life. Life science will therefore be required to deliver key parts of the solutions to these challenges. And London will have a globally significant concentration of life sciences institutions over the next decade, including the Francis Crick Institute, so collegiate leadership from our faculty will be critically important to deliver UCL's goals.

There remains much unrealised opportunity in life sciences; the Faculty as a whole is not always perceived as more than the sum of its individually excellent parts; strong interdisciplinary research in some parts of the Faculty is not always matched in other areas; and some areas of teaching and innovation are not performing at their full potential either intellectually or financially. This suggests four areas for development.

FOUR PRIORITIES FOR DEVELOPMENT

1. Pursuing excellent life science research [UCL 2034 themes 1, 3, 5, 6]

Excellent research is delivered by excellent scientists and scholars. Our actions must therefore support and enhance the ability of this group to pursue excellent research, wherever possible unencumbered by unnecessary bureaucratic obstacles. In return for this right to pursue their own course of actions, our community have the responsibility to ensure they contribute appropriately to the overall wellbeing and sustainability of the Faculty - particularly financial sustainability - and understand our overarching goals.

Delivery of excellent life science research requires that every individual seeking to engage in research has appropriate research funding. We must therefore ensure that individuals performing in the lowest quartiles for

UCL FACULTY OF LIFE SCIENCES

research income have sufficient support and an action plan to achieve such funding. An appropriate level of research funding will vary by individual and by field, so rather than targeting particular income levels an individual approach will be required. Research rarely covers its overhead costs, so sustainable growth in research income must be accompanied by appropriately maximising overhead recovery. This will require appropriate costing of PI salaries; use of Fellowships where appropriate; judicious choice of funding body where a choice exists (prioritising RCUK); and appropriate cost recovery of any use of platform technologies.

Pursuing excellent research does not mean unfettered expansion. A sustainable Faculty requires a significant slowing of the recent expansion in staff numbers, but there is opportunity for renewal as the age profile of this Faculty is changing rapidly and has a significant number approaching retirement. Such a slowing means that we must pay close attention to our recruitment processes, ensuring that at all levels we recruit the best and brightest in a gender-neutral fashion. And because the staff we will have in the future are predominantly the staff we have now, we must invest in training both for academic and laboratory leadership. We will evaluate the quality of staff contributions appropriately, focusing on the quality of individual research outputs and their impact rather than quantity or journal-level metrics.

While research is undertaken by people, this does not mean that their physical surroundings are unimportant. Our central Bloomsbury location places many constraints on our estates, but a sustainable future for Life Sciences means prioritising appropriate development of our estate, with refurbishment where necessary but new developments where required. Our new estates developments must fully reflect our strategy and include research, teaching and enterprise/impact components in their business plans which must be both financially and intellectually sustainable. In the near term we will prioritise the Institute for Macromolecular Machines and teaching developments with Birkbeck, and the UCL/Leica imaging centre. In parallel with this, we must look again at our current estate to see that it is appropriately costed and supported and fit for purpose.

We must be careful in reviewing our portfolio to identify any new strategic scientific opportunities. Plant sciences are one obvious area where we have no presence; the physics of life is an emerging area; tissue biology has been proposed as a third. In going forward, a sustainable future for the academic core also means paying more attention to work that crosses disciplinary boundaries. Tissue biology, for example, could synergise effectively with regenerative medicine in FMS and FBrS, informatics must have effective engagement with the Crick and with the Farr Institute; the Institute of Healthy Ageing must link more effectively with Population Health; and the School of Pharmacy should play a major leadership role in co-ordinating drug discovery pathways in Medical and Brain Sciences. These opportunities reflect the increasingly interdisciplinarity of science. We must take advantage of this without sacrificing the disciplinary excellence within Life Sciences. Life Sciences should be recognised as an active participant in the broader institutional agenda set by the Grand Challenges and should utilise its intellectual depth to engage with this UCL-wide interdisciplinary community. We must be proactive in searching out new opportunities; strengthen links with the physical sciences at UCL; and be a leader in interactions with the Francis Crick Institute.

2. Delivering impact in the life sciences [UCL 2034 themes 1, 3, 4, 5, 6]

Sustainable world-class status requires a long-term commitment to impact. Already prominent (and successfully delivered) in REF 2014, we can expect this need to grow; and it is central to UCL's ambition. Within the School of Life and Medical Sciences, the Faculty has relatively low levels of invention disclosures and engagement with UCLB and a low level of engagement with the Translational Research Office as indicated by a very small portfolio of DPFS awards. While this is partially due to the nature of the pre-clinical and pre-competitive scientific work undertaken within the

Faculty, a much higher level of industrial studentships and consulting deals (both the highest in the School) suggest in contrast that strong opportunities exist for industrial engagement but have not yet been fully realised. The long-term nature of impact lends an urgency to progressing the enterprise strategy devised by the Vice Deans which will include significant awareness raising activities with staff and students; investor days to showcase scientific work; and a broader conception of enterprise beyond biomedicine.

Delivering impact requires transferring knowledge outside the university. We already have many scholars who are household names in public engagement with a wide variety of audiences, from social media to mass-market paperback books; but our activity as a whole is not brought together and made visible, nor are our early career academics sufficiently encouraged to develop this strand of activity. REF 2020 will require all of our publications to be made open access, and so we will need to develop and deliver engagement between our academic staff and the institutional mechanisms such as RPS and IRIS that will enable this. Transferring knowledge also extends to other areas such as influencing government policy and contributing to international guidelines. In some areas of the Faculty, such as the School of Pharmacy, there is both existing best practice and significant potential that we need to develop and extend to all areas of the Faculty, together with the Office of the Vice Provost (Research).

Finally, our alumni are a highly successful and increasingly engaged diaspora who represent the legacy of Life Sciences teaching over the last six decades. But we do not make sufficient use of their knowledge and ideas and their contacts. Nor do we tap their generosity. We must continue to develop engagement with alumni as a priority to enhance our impact.

3. The best life sciences student experience [UCL 2034 themes 1, 2, 4]

Our teaching and training is not just an end in itself, but serves as a way to transform society through developing a cadre of Life Sciences alumni who share our attitude and beliefs. This goal requires attracting the brightest and best students from across the world. To do this we must improve the marketing of our courses, both nationally and internationally; and deliver a innovative and fast moving outreach programme that meets or exceeds our OFFA targets. For home students, we must improve conversion rates by providing personalised advice and access to exciting real and virtual open days. For overseas students, we must improve the provision of both information and appropriate tuition fee support to deliver scholarship without borders.

When students arrive at UCL, they must recognise the quality and innovation in a UCL Life Sciences undergraduate degree. We must therefore define and deliver an inspirational student experience. This should directly reflect our research philosophy; changing the world through rigorous Life Sciences discovery research that addresses the most important challenges. We must develop ways of exposing students to academic leaders and world-class researchers from arrival; continue to enhance and develop large-group practical teaching; and introduce new ways in which undergraduates can participate in the experimental life of the Faculty. Importantly, this includes consideration of how to organise our space and estates in order to facilitate student engagement with our research.

The innovative ways of enhancing training that we introduce must take full advantage of the mechanisms available to us centrally, from liaison with the International Office to ensure our courses are well marketed to UCL Advances to inspire our budding entrepreneurs. And we must in turn communicate with students and staff the successes of our teaching and learning portfolio; and generalise best practice across the other Faculties.

4. Ensuring a sustainable future for Life Sciences [UCL 2034 themes 1, 5, 6]

Our future is one where sustainability is not just desirable but essential given the national constraints on higher education funding. We need to make a surplus on our activities not only to invest in new scholarly areas, but to help refresh and rebuild the estate and to fulfil our obligation to our colleagues in other Faculties to pull our weight as part of a community of scholars.

Sustainability begins with each individual member of staff. The distributed nature of our Faculty decision making, and desire to enhance the autonomy of each individual within that community means that the decisions individuals make about research grant funding, teaching portfolio and enterprise activity all directly impact on the sustainability of the Faculty. Each individual with these rights has reciprocal responsibilities to consider and understand how to contribute to the sustainability of our Faculty. For academics submitting research grants, this will mean considering overhead recovery, appropriate costing of platform technologies, and the use of PI percentage time and Fellowships to raise part (or all) of their salary costs. For academics teaching, it will mean considering how best to market their courses, cost-recover module teaching through accurate documentation of student load, and consideration of a realistic business model underpinning new teaching activities. Often this will mean growing successful activities for which there is unmet high quality demand, and terminating less successful activities for which there is little demand. And in enterprise, a sustainability agenda will often mean prioritising high margin activities that contribute to our academic mission such as quantitative skills training in biology; and delivering new sources of income such as philanthropy. At all times our activities must be guided by our scientific and academic vision; but the prioritisation of those activities will need to take into account sustainability.

Delivering a sustainable Faculty will be challenging. It is therefore important that we have outstanding leadership at all levels of the Faculty. It will be important to have an inclusive approach that embraces the Heads of Research Departments in this process, renewing and refreshing such appointments in a transparent fashion where appropriate. We will continue to make significant investment in developing a strong and collegiate action-oriented leadership team. We must ensure succession planning is systematically addressed in a gender-balanced fashion throughout the Faculty, using mechanisms such as the SLMS Future Leaders scheme to identify and encourage talent wherever it is found.

Finally, our Faculty will fail if it does not address in a meaningful fashion the equality and diversity issues that arise at all levels of the organisation. On gender, we must accelerate our efforts achieve Athena SWAN status for all elements of the Faculty. But equality and diversity issues are broader than just those affecting gender, and we must ensure for a sustainable future that all aspects of equality and diversity are addressed.

NEXT STEPS

Each of these priorities is relevant to all of us in the Faculty, and so change begins with each of us critically and constructively reviewing our own portfolio of scientific, teaching and enterprise activity against these goals. Delivering these priorities will need all of us to identify the elements in our own activity that require change or improvement, and to ensure that such developments are appropriately prioritised and supported by our leadership team. Priorities are not fixed but evolve over time, and so dialogue will be a critically important part of this ongoing process to deliver and sustain the community we seek to create.