Vice-Chancellor's Office

The role of Universities as dynamic catalysts for change

Beyond the Academy: Embedding Interdisciplinarity Workshop, Conservation Research Institute, University of Cambridge

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Thank you all for staying the course and sticking around to hear me at the end of a couple of busy days.

It is a little embarrassing to parachute in after you’ve done all the hard work to offer some closing remarks... but the truth is that the question of interdisciplinarity, and how universities nurture it, is one I am deeply interested in.

Universities are among the few institutions to have survived since the medieval era. Cambridge, of course, is one of the oldest in the world.

But although universities like this one remain in some ways intact, in other ways they are unrecognisable.

Some may think of Cambridge as a university weighed down by over 800 years of tradition. Another way of viewing it is as a university underpinned by over 800 years of change.

The truth is that over the centuries, universities have been at the heart of social, economic, and cultural evolution – and as you know, the study of evolution is a bit of a speciality here...

In fact, universities have throughout history been dynamic catalysts for change.

Think of the great currents of social change in the 20th century: feminism, civil rights, the anti-war movement... So much sprang from universities.

At least in part, it’s because universities are places where students and scholars are given the time and space to think.

To think hard about what is wrong in our world, and to think hard about how
to make it better.

Universities are places where we come together from diverse backgrounds, where we read widely, where we talk – and where the talk sparks ideas.

At their best, universities nurture rich ecosystems of discovery, research and innovation. We are very fortunate, here in Cambridge, to be at the epicentre of such an exciting ecosystem – of which this David Attenborough Building is one key component (more on this later...).

From the discovery and harnessing of monoclonal antibodies, to the sequencing of the human genome, to the invention of the Raspberry Pi (to name but a few contemporary examples), the ideas and innovations that have emerged from this ecosystem have truly changed people’s lives.

Thinking about an example closer to your deliberations over the last two days, I could mention the regular monitoring of ozone carried out since 1957 by the British Antarctic Survey, just down the road, and which led to the detection of the ozone hole. This discovery led to efforts to address the problem under the Montreal Protocol – one of the most successful examples of global leadership tackling an urgent environmental issue.

**The role of interdisciplinarity**

Environmental challenges are one particularly obvious example of the need for innovative thinking, and nimble action.

This is where the discussions that you are currently engaged in, on the role of interdisciplinarity, as so crucially important.

This is especially true in sustainability science, which looks at real-world problems that require understanding not only of the natural world but also of human interactions with it, spans the natural and social sciences.

Addressing challenges – for instance, providing adequate nutritious food for the planet’s burgeoning population – requires the combined efforts of engineers, geographers and mathematicians.

Together they must develop tools to predict future demands for energy, land and water.

Plant and veterinary scientists must collaborate with colleagues across the world to improve crop yields and livestock resilience to disease.

But it doesn’t only require scientists.
Solving food security requires researchers in the humanities and social sciences to analyse the political economy of food supply, and to evaluate the role of political structures in the production and distribution of food.

It requires greater understanding of the regulatory frameworks of land ownership, and the economics of changes in land-use.

It requires public policy analysts to formulate methods of embedding new practices in communities and nations.

**Institutional challenges**

I believe very deeply that universities – in particular research-intensive universities like this one – should be the perfect hotbed for interdisciplinarity.

However, I am very conscious that interdisciplinary working has yet to become fully embedded in academia.

We like to think that as a collegiate university, where scholars and researchers work, live and eat amongst colleagues, peers and students from a wide variety of disciplinary (and cultural) backgrounds, Cambridge has interdisciplinarity built in – that it is in our DNA.

Yet we must recognise that, more often than not, conventional academic systems are not designed to support interdisciplinary research. Traditional structures tend to reward and encourage individual achievement within disciplinary boundaries.

Often, the incentives for individual academics reward depth and focus. Specialisation is inevitable as people advance the frontiers of knowledge, and this sometimes means that the work that is required to understand alternative ways of thinking, or framing a problem, is not adequately rewarded within career structures and promotional pathways.

Conversations across disciplinary boundaries can be difficult, imbued with differences in ways of thinking, methods, knowledge systems and values.

Disciplines can also be very tight, in policing their boundaries, and framing what is accepted as legitimate modes of inquiry, or methods of research.

The individual academic, stretched because of ever increasing demands on her time, may find that complying with these disciplinary expectations is easier than trying to carve out new, more challenging pathways.
Career structures, publication opportunities and peer-review processes tend to reinforce specialism within narrow sub-disciplines, as do institutional structures and boundaries that are largely created for administrative convenience.

Here in Cambridge, much of our activity is organised through six academic Schools, within which our Departments and research groups are located. These Schools serve an important purpose, organising activity and resource allocation.

But, they are just one particular administrative grouping that has evolved out of our particular history.

Our teaching is too rigidly structured in a Tripos system that does not make the sharing of lectures or papers easy.

Rigid structures lead to rigid thinking – and put off potential students and researchers wishing to straddle various fields.

I’m very conscious that we could organise ourselves in other ways – indeed, many other Universities already do, with very different structures.

What we all have in common, though, is the need for some form of rationalisation to allow the administrative process to function effectively.

The difficult balance for us, institutionally, is finding ways for these structures not to constrain the free thinking and innovation that is the vital lifeblood of academia.

**Solutions**

We are trying to address these challenges. Change comes slowly in an 800 year old institution – but just because something is difficult doesn’t mean we shouldn’t try it.

We have established cross School initiatives that have demonstrated a critical mass of academic support. We call these our Strategic Research Initiatives, and our Interdisciplinary Research Centres.

These initiatives address large-scale multi-disciplinary research challenges; strengthen research collaborations and knowledge transfer across disciplines; increase research capacity and profile by providing a platform for large-scale
funding applications, recruitments and international research partnerships; and enhance our ability to influence national and international research, policy and funding agendas.

We stand here in the flagship David Attenborough Building, a visible example of one of our more successful initiatives, the University of Cambridge Conservation Research Institute, bringing the natural sciences and technology into intellectual dialogue with the arts, humanities and social sciences.

The Conservation Research Institute is the academic ‘engine room’ of the Cambridge Conservation Initiative (CCI) – a unique collaboration between the University of Cambridge and nine leading biodiversity conservation organisations – which we think is probably the world’s leading cluster of conservation research for policy and practice.

This is just one such example. We are trying to do more, in other areas. Our biomedical campus, built around one of the world’s leading teaching hospitals at Addenbrookes, is a hub for innovation and research to address some of the most complex medical challenges, with partnerships bringing private and publicly funded research together in the service of humanity.

**The value of this network, and its challenges**

Your conversations over the last two days come at an important time for us, here in Cambridge.

We are starting to think about new ways of encouraging interdisciplinarity, of rewarding innovation, of supporting collaboration.

The essay that this network published two years ago flagged up some important areas of reform, and we are beginning to address some of these within our own thinking.

For instance – our innovative Masters in Conservation Leadership is a course designed for mid-career professionals who aspire to leadership in the environmental field, but who wish to spend time learning and developing at one of the world’s leading Universities. Crucially, it aspires to create future leaders, not academics – and has taught students from over 70 countries.

This Building is an excellent example of how we value co-creation and problem driven applied research. Yet even here there is room to do more: co-location does not always result in collaboration, if our career structures and incentives still do not do enough to encourage colleagues to embrace these
opportunities. So we need to think about how our hiring decisions, and promotion criteria, can be adapted to reward interdisciplinary pathways, alongside more traditional ways of working.

We are beginning to create an ecosystem to catalyse solutions. We have accelerators and impact funds which are intended to push ideas into action. I personally enjoy our annual celebration, the Vice-Chancellor Awards for Impact, which recognises our most innovative impact champions, those who are using their knowledge to improve social outcomes.

We are very aware that people are at the heart of what we do, and the Conservation Research Institute recognises that work on sustainability has to embrace insights from the social sciences, arts and humanities. If we fail to understand what drives human behaviour and choices, we will not be able to enable change at the scale that is required to avert planetary crisis.

I’m especially pleased to support Cambridge’s latest initiative in this area – our Carbon Neutral Futures Initiative. This will gather the considerable expertise dotted across the University to respond to one of the defining challenges of our time. It is our aspiration that, by convening this critical mass of knowledge, the initiative will reveal new pathways to a more sustainable future.

I hope to have shown with these few examples that there is much working already underway, But I recognise that much more work remains to be done.

That is why your call to us, as University leaders – to be bolder, to embrace systemic change, and to push institutional reform – is an important one.

And as Vice-Chancellor, I am here to listen and to learn.

To learn from what you have been discussing over these last two days.

To learn from the good practice you are share across your network.

To learn from the practical steps you recommend to deliver change.

So thank you for what you are doing – and for inviting me to be part of these discussions.