



Challenges for Life Science Universities in delivering future global leaders

In October 2016, the 6th ICA Rectors and Deans Forum considered how life science universities should respond to the global drivers for change in agriculture and the food and non-food value chains, to deliver graduates who have the knowledge, skills and competences to be leaders in their future careers (www.ica-europe.info). Delegates came from 37 universities and from 26 different countries. This short paper summarises the discussions and conclusions of the Forum.

Summary

Life Science universities must embrace change and work with their staff, students and stakeholders to continually develop inspirational innovation and education systems. Graduates must have discipline specific knowledge but also be skilled in communication, free thinking and ethics. University leadership must be inclusive and strategic. Agriculture and Life Science Universities have the unique challenge of the increasingly multidisciplinary nature of the field where a broad knowledge of the natural, social and applied sciences are needed to solve the problems that society faces.

Introduction

The higher education landscape is changing rapidly and universities have never had to address so many burning issues at the same time. The main challenges for agriculture and life science are (i) growing world population and migration, (ii) changing dietary and nutritional demands, (iii) growing competition for biomass, (iv) globalisation of markets and price volatility, (v) biodiversity decline, climate change and scarcity of natural resources, and (vi) urbanisation and increasing demand for public good services.

Life science universities need to respond not only to global drivers but also to the opportunities for the greater use of digital instruments, new teaching methods, transnational education, distance learning, and internationalisation in the delivery of education.

Employers place ever greater focus on generic competences in the graduates they seek to recruit and demand that universities address

these competences in the curriculum. Universities also recognise the need to place greater emphasis on high level engagement with analysis, synthesis and creativity and to prepare their students to become global citizens.

In a globalised world, the role of the life science Rector or Dean carries many challenges. On both the operational and strategic levels there are demands to secure and develop university functions and activities. The core function of the life science university is to deliver new knowledge, education and skilled graduates to address the challenges of 21st century as enumerated by the Paris Climate Agreement (COP21) and the United Nations Sustainable Development Goals.

Following expert presentations and panel discussions the Forum agreed the following conclusions:

1. The challenges life science universities will address in delivering leaders for a global world

- 1.1 Embrace change: adopt resilient structures to be able to respond rapidly to opportunities
- 1.2 Hire staff with the potential to be excellent at teaching, research and innovation. Upskill, recognise and reward these activities
- 1.3 Transform students from being knowledge takers at entry to being knowledge users and givers upon graduation
- 1.4 Provide graduates with the skills and competencies to address issues that do not yet exist
- 1.5 Give graduates a broad global perspective (from experiences both at home and abroad)
- 1.6 Further foster relationships with business, industry, alumni to enhance teaching, innovation and inspiration among students
- 1.7 Be the continuous educator: deliver life-long learning and knowledge transfer solutions for graduates and society
- 1.8 Enhance, grow and protect the prestige and reputation of the university as a leader in life sciences. Do not compromise on excellence.

2. Ideal graduates of life science universities

- 2.1 Have learned the content (e.g. disciplinary knowledge) and acquired the skills (e.g. communication, creative thinking) to be successful
- 2.2 Are able to understand and integrate across the silos of the many different sciences & technologies to define and solve real world problems
- 2.3 Have the soft skills to lead teams of diverse experts
- 2.4 Can communicate and explain to diverse audiences
- 2.5 Are ethical and responsible
- 2.6 Fully engage in extracurricular activities.

Key words describing the ideal graduate: Agile, Communicative, Cooperative & collaborative, Entrepreneurial, Ethical thinker, Evaluate, Flexible, Globally minded, Intercultural and gender aware, Language proficient, Listeners, Legislatively aware, Networked, Problem solvers, Socially skilful, Technical skilful, Risk aware, Responsible, Self-confident, Team builder

3. Leadership and strategic development challenges

- 3.1 Have a leadership structure that can respond effectively to unplanned events
- 3.2 Put a focus on leaders at all levels within the university. Realise that leaders are needed at places that are close to where value is created
- 3.3 Develop leaders from within – have a leadership development programme
- 3.4 Work with faculty to understand the balance between individual freedom and institutional obligation
- 3.5 Build a common vision within the organisation by getting all staff and faculty involved in strategy development
- 3.6 Trust, and earn trust.
- 3.7 Define clear and implementable aims and objectives (and ask if they conflict with each other). Consider using the Sustainable Development Goals as a starting point.
- 3.8 Find a balance between Research and Teaching in individuals and in groups of faculty
- 3.9 Continue to build interdisciplinary thinking in teaching and research
- 3.10 Provide increased flexibility to students to meet their individual need against a backdrop of mass higher education systems.
- 3.11 Be at the forefront of building international and digital communities
- 3.12 Make choices in developing a strategy. For example, decide on areas of excellence and collaborators and build them.
- 3.13 Influence national policy and connect with society

The multidisciplinary nature of agriculture and life sciences was considered to be the specific challenge for agricultural and life sciences research and education, where a broad knowledge of the natural, social and applied sciences is needed to solve the problems that society faces as exemplified by the Sustainable Development Goals. Agricultural and Life Science Universities have a unique role in delivering graduates with the knowledge, skills and competences to be the future leaders to address these challenges.