

Dianna Bowles

University of Newcastle on Tyne - BSc Hons 2.1 Botany 1970
University of Cambridge - PhD Biochemistry 1973

Postdoctoral Fellowships at the University of Kaiserslautern, University of Regensburg, University of Cambridge, Weizmann Institute, European Molecular Biology Laboratory 1973 -1979

University of Leeds 1979 – 1993 Lecturer through to Personal Chair

University of York 1994 - 2012 Established Chair of Biochemistry

Personal Statement

Committed to creativity and strategic vision in the Biosciences

- Designed and directed the Centre for Novel Agricultural Products at the University of York - focussing on biology to benefit society and made possible through awards totalling £9.8M first from The Garfield Weston Foundation, followed by UK Government and The Samuel Roberts Noble Foundation. CNAP was ahead of its time in the mid-1990s and rapidly became self-funding. Awarded a Queen's Anniversary Prize in 2006. Major research programmes continue to include plants and plant products for health, for energy, and for the design of novel bio-renewables. Director of CNAP until 2008, standing down to focus on the Gates grant.
- Designed and led an initiative for a new three building infrastructure of the entire Department of Biology at the University of York - to maintain creativity and increase innovation. £21.5M awarded from UK government to redesign the research context of Biology and to include funding for equipment and trained technologists to develop a resource for all science-led groups - a unique training and development environment - the Technology Facility. This continues to drive the application of new essential technologies throughout the department.

- Designed, and led as Editor in Chief for 11years, *The Plant Journal* – an international research journal funded and published by Blackwell/Wiley, focussing on plant biology, plant products and their potential for applications.
- Designed and led Heritage GeneBank in 2001, with a first award from The Garfield Weston Foundation followed by The Sainsbury Foundation, UK government and additional countryside groups. Following the FMD epidemic, the response initiative developed into a national UK charity, The Sheep Trust supporting locally adapted Heritage sheep breeds. Research of the Charity has led to recognition of geographical concentration of a breed as a major risk factor leading to new protection for Heritage Breeds on the National Risk Register. Chair of the Trustees. A continuing determination to help ensure a robust evidence-base of science is at least available to underpin Government policy.
- Designed, led and presented the ideas to the Bill & Melinda Gates Foundation in Seattle US to gain their support and funding to improve the medicinal plant *Artemisia annua* and generate new varieties with higher yields of artemisinin, a key treatment for malaria. \$25.5 million over six years awarded to CNAP at York to gain new findings and take the research through development into delivery; recognised within BMGF as one of their first grants in malaria to go into successful delivery. Grantee and Co-Principal investigator of the Gates research and delivery programme from inception to retirement in 2012. A determination throughout to develop useful science and technology and then help to ensure the data supports applications of societal benefit.
- Invited international presentations 1994-2012 on forward research strategy and vision for the future science needed to underpin an emerging Bio-Economy.

Appointed in senior science advisory roles to UK Government Research Councils, Departments and organisations

- BBSRC (1993-2007)
- MAFF/Defra (1995-2005)
- OST/DTI/BERR/TSB (1997- 2012)

- The Royal Society (2006-2007)

Appointed in senior science and policy advisory roles to the European Commission, the EC-US Task Force in Biotechnology Research, the EC initiatives on Farm Animal Genetic Resources

- Chair of the External Advisory Group for DG Research, Theme 2 of Framework 7: Food, Sustainable Agriculture and Biotechnology (2006-2008), chairing a large committee of all member state representatives.
- Member of the Cell Factory External Advisory Group (1998-2003)
- Steering Group and European Co-ordinator for "Bioproducts from Plants" (2004-2008).
- Plants for the Future EU Technology Platform Strategic Vision Panel (2005-2008)
- Designed and directed the EPOBIO Initiative (2005-2008), an international consortium in Science to Support Policy
- Designed and directed Heritage Sheep (2007-2009), an international consortium in farm animal genetic resources,

Personal research interests, leadership and laboratory outputs

- Broad-ranging personal research interests in understanding living organisms at the molecular level. Trained in biochemistry and interested in learning how plants (and latterly, sheep) respond to changes in their environment and the molecular mechanisms that have evolved to minimise risk and maximise metabolic and developmental opportunities. Consecutive funding for this fundamental research from UK Research Councils from 1980 – 2011. In retirement, an Emeritus Fellowship 2019-2021 from the Leverhulme Trust.

My personal strategic research interests focussed on applications of plants and plant products for the development of improved crops and the development of novel solutions to human disease. For these projects, my laboratory has been funded by LINK programmes, UK medical charities, the EC and UK/international industry

- >150 publications (1970-present) including high impact journals (*Science*, *Nature*, *Proceeding National Academy US*, *EMBO Journal*) and review journals (*Annual Reviews in Biochemistry*, *Annual Review in Plant Biology*, *Proceedings of the Royal Society*, *Current Opinions*, *Trends*).
- 28 postgraduates supervised to PhD (1980-2011): all successfully gained their doctorates within the set time.
- 45 postdoctoral young researchers supervised (1980-2012) as independent fellows in my laboratory or as employed research assistants on my Research Council grants; 3 Royal Society University Research Fellowships awarded to postdocs from my laboratory to enable them to pursue their independent careers.
- Board of Reviewing Editors for *Science Magazine* (2006-2008); Founding Editor-in-Chief, *The Plant Journal* (1991-2002); international and UK advisory and review committees (1979-2016).

Public Understanding of Science

- At Leeds, initially visited schools; went on to establish 'Day Schools for 6th Formers', repeated 5 times annually, with >2000 fee paying attendees from across northern England; established with the School of Education, continuing education courses for school teachers of Biology (1986-1993).
- At York, designed Hidden Worlds Secret Lives, a large and highly appreciated initiative, taking simple microscopes into primary schools throughout York and West Yorkshire, accompanied by artists – funded by BBSRC, Royal Society COPUS, and Yorkshire Forward 2002 – 2008) ; established Artists in Residence in CNAP, funded by The Arts Council (2004-2005).
- At the Yorkshire Agricultural Society of the UK, designed and Chaired the Farmer-Scientist Network, bringing researchers together with practising farmers and policy makers from across the UK (2012 - 2015). The FSN continues as a major outreach activity of YAS.

Recognition

- Elected to European Molecular Biology Organisation (2001)
- Nominated to Fellowship of the Royal Society for the encouragement of Arts, Manufactures and Commerce (2002)
- Nominated to the Presidency of the Herdwick Sheep Breeders Association (2003)
- Awarded an OBE for public services in the sciences (2003)
- The University of York awarded a Queen's Anniversary Prize for Higher and Further Education in recognition of research to support the Bio-Economy within the Centre of Novel Agricultural Products (2005)
- Awarded an Emeritus Chair of Biology, University of York (2012)

