



Task Group on Education and Mobility

Biotechnology Workforce Development

Workshop organised by the EFB Task Group on Education & Mobility 22 August 2005, Technical University of Denmark, Copenhagen

Chairman: Professor Charlie Bryce, EFB Vice President and Chairman of the EFB Task Group on Education & Mobility (*School of Life Sciences, Napier University, 10 Colinton Road, Edinburgh, EH10 5DT, Scotland*)

- 1700 **Workforce Development for Life Sciences - The Scottish Experience**
*Carol Booth, Scottish Enterprise, 150 Broomielaw, 5 Atlantic Quay
Glasgow, G2 8LU, Scotland*
- 1730 **Research and Training for Bioprocessing, an Irish Proposal**
*Kurt Naujoks, Director for Bioprocessing, Engineering Building, Belfield, Dublin 4,
Ireland*
- 1800 **New Models for Workforce Development**
*A. Stephen Dahms, CSUPERB, San Diego State University, San Diego, California,
92182-1230, USA*
- 1830 **Plenary Session**

Introduction

There is a need for a more focused and planned approach to workforce development to satisfy the projected needs of the emerging and growing modern biotechnology industry. This is reflected in a requirement for new training models designed to meet these needs through a range of formally accredited qualifications (Diploma, Degree and postgraduate), continuing professional development (CPD) and a number of other diverse and novel approaches. Each of the speakers has been intimately involved in this more professional and strategic approach to workforce development and will discuss their achievements to date and their plans for the future.

Workforce Development for Life Sciences-The Scottish Experience

Carol Booth

The presentation will look at, the background and definition of Workforce Development for Scottish Enterprise, examine information available to support Scottish Enterprises economic intervention and where and when to intervene. Conclusions emerging from the evidence base will be used to outline Scottish Enterprises approach to workforce development and look at which actions might be required to address identified issues.

Moving on to reasons for integrating Workforce Development into business development and how the Life Sciences cluster team at Scottish Enterprise, stakeholders and partners in Scotland have approached their current and future contributions to Workforce Development for Life Sciences using a variety of projects.

- Beacon Industrial Placements
- Pre Bio
- SCBC Tailored Courses

- Intern Studentships
- Management Development Programme
- Connect 360 and Masterclass
- RSE Fellowships
- Scottish People Management
- Leadership Programme

Research and Training for Bioprocessing, an Irish Proposal

Kurt Naujoks

The **National Institute for Bioprocessing Research and Training (NIBRT)** in Ireland is a proposal that will be a state-of-the-art training, research and pilot plant service facility that brings together institutions with complementary expertise and state-of-the-art research technology, and industry partners. These include University College Dublin, Trinity College Dublin, Institute of Technology, Sligo and Dublin City University.

NIBRT is an innovative collaboration between academic institutions at the forefront of biotechnology, cell biology, engineering and pharmacy and industry. For training, two separate training labs, for upstream and downstream training, in addition to 5 research labs are planned. It will also include a state-of-the-art pilot plant fermentation facility for fermentation optimisation, fermentation scale-up, product separation and purification, regulatory aspects and automation.

By aligning with industrial demands, the new institute will tailor its training programmes while remaining on the cutting edge of biotechnology research and technologies.

The fermentation facility will offer hands-on training workshops and educational modules for outside researchers and companies. These workshops cover the fundamentals of small-scale fermentation, scale-up considerations, and fermentor design and set-up.

The training and educational philosophy underpinning the NIBRT will focus on the needs of industry with an emphasis on providing training for accreditation of existing industry staff and prepare technicians and graduates for the technical, business, regulatory and professional aspects of the industry.

The strategy is to provide specialised modules in NIBRT in support of courses established in the higher education institutions, which will provide the certificates, diplomas and degrees.

Modules will be offered for all categories of students and will be given credits respected by other third level institutions in Ireland.

The Role of Professional Graduate Degrees in Meeting Current and Future Biotechnology Industry Workforce Needs

A. Stephen Dahms

The presentation will review the status of new graduate training models designed to meet the unique needs of the biotechnology industry as it transitions to commercialization. Emphasis will be on professional master's degree programs in biotechnology and their various versions, with a focus on operational and funding strategies and industry acceptance. Discussion will also centre upon the creation and operation of industry-validated, specialized and highly targeted professional masters degrees in various refined aspects of the drug development process, including Regulatory Affairs, Biomedical Quality Systems, Clinical Affairs, Management of Drug Development, Management of Reimbursement Affairs, Bioinformatics, etc. The Eurodoctorate in Biotechnology, new combined MBA/PhD combined degrees in the molecular life sciences, the U.S. Professional Doctorate in Chemistry and the proposed U.S. Professional Doctorate in Biotechnology will be also discussed. Data will also be presented on the current workforce and the industry's projected needs.