The Role of the Profession in the Development of Field Specific Qualifications
Biomedical Scientists – Who Are We?

- > 70% Clinical Decisions are based on a diagnostic test.
  - Yet the biomedical scientists who provide this essential service remain invisible.

- Biomedical Scientists throughout Europe are a group of educated and skilled scientists who are dedicated to the provision of a quality laboratory service for the diagnosis and monitoring of disease.
Where Have We Come From?

- Biomedical Science as a Profession evolved from Nursing or Pathologists Assistants.
- Basic Courses evolved providing education in basic science and Biomedical Science.
- Practical training was provided ‘on the job’.
- Emphasis on practical competence.
  - Techniques were all manual.
Where are we now?

- Graduate level Profession
- Many members have Masters and Doctorate level qualifications
- Development was led by pioneers who were committed to the development of the profession.
- Combination of complex technology and automation that has apparently simplified investigations.
Critical Clinical Decisions

- Diabetes
- Leukaemia
- Cancer Diagnosis
- MRSA
- Blood Transfusion
- Cervical Screening
- Therapeutic Monitoring
- Targeting Therapy

Where are these diagnoses made?
**Knowledge**
- General
- Specific (BLS)
- Basic scientific research skills
  - Legislation
- Economy / Management
- Validation/Interpretation of results*

**Technical/Methodological**
- Laboratory methods/Basic principles
- Organization of lab work
- Information/Communication technology
- Quality control/assurance;
- Basic scientific research skills
  - Awareness of the need for QC

**Quality**

**Social**
- Interaction with:
  - Patient
  - Team (intraprofessional)
  - Interprofessional (nurses, physicians)
  - Professional partners (companies, org.)
  - Relatives (to patient)

**Personal**
- Professional identity
- Role in health care system
- Lifelong learning
- Awareness of limits of competence
- Validation/Interpretation of results*
The EPBS was formed in May 1999.

This non profit organisation is committed to promoting best practice and ethics for Biomedical Laboratory Scientists throughout Europe.

It was officially registered in Brussels, Belgium in 2006.

Membership is open to professional bodies committed to developing the skills and knowledge of the biomedical scientist in order to become an effective member of the health care team.
EPBS Members

- Austria
- Belgium
- Bosnia
- Croatia
- Cyprus
- Denmark
- Estonia
- Finland
- France
- Germany
- Iceland
- Italy
- Greece
- Ireland
- Netherlands
- Norway
- Portugal
- Serbia
- Slovakia
- Spain
- Switzerland
- Sweden
- United Kingdom
EPBS Objectives

- promote the maintenance of the highest possible standards of practice within biomedical science;
- develop the ethical and professional values of the biomedical scientist;
- support the training and education of the biomedical scientist in order to improve health care provision;
- foster co-operation between member societies in areas of education, continuing professional development, competences and research;
- liaise with EU Commission on all issues relevant to biomedical science;
- utilise this shared knowledge between the societies to the benefit of all.
Education of Biomedical Scientists in Europe

**Course Duration**

- The majority of countries, 80%, have achieved a standard of Bachelor or 1st cycle under the Bologna process.
- Education in the core basic sciences is observed in over 60% of all member countries.
Education Policy Of EPBS

- The minimum standard of education for Biomedical Scientists acceptable to EPBS is a Bachelor level or 1st cycle (240 ECTS) under the Bologna Process.

- Progress to higher level degrees of Masters and PhD is an integral part of the Education and Training of Biomedical Scientists.
Course Accreditation

Academic
- Academic Standard
- Accreditation
- Curriculum Delivery

Regulator
- Patient Safety
- Minimum Standard
- Fitness to Practice

Profession
- Patient Safety
- Professional Competence
- Professional Standards and Development
EU Directive on Free Movement

- Supported by EPBS
  - Common Platform

- Submission to Directive reform
  - Support for Professional Card
  - Support for reshaping Common Platform
  - Biomedical Science qualifications to practice are important for patient safety.
    - Language competence is necessary especially in clinical emergencies

- Lack of Bachelors Level Education in some countries is a barrier to free movement
EPBS: Working for Standards

Government
- Letters of support
- Policy

National Associations
- Standards
- Assistance with Government and Colleges

Colleges
- Curriculum Development in Partnership
- Academic Network
- Masters Programme
EANBMS: Academic Network

- Network of Universities, Colleges and Schools that teach Biomedical Science across Europe
  - Opportunity to participate in European projects
  - Support to develop programs in Biomedical Science
  - Facilitates ERASAMUS exchange
  - Inspiration for professional development
  - Discussions of mutual concern
  - Possibilities of international co-operation/collaboration – research
  - Contributions to QA and benchmarking for Biomedical scientists in Europe
  - Researching the extent of Evidence Based Practice
  - Exploring and sharing learning & teaching methods
Challenges for One European Profession

- Not all Biomedical Scientists have the same Education and Training.
- Not all Biomedical Scientists have the same educational and clinical experience.
- There are emerging disciplines and specialties in both scientific and allied areas.
- We now have a mixed profession of those with a broad range of experience and those with more concentrated experience.
- How can we ensure that scientists continue to grow?
- How can we ensure that their competence is acknowledged and exploited?
## Diversity of Laboratory Medicine

<table>
<thead>
<tr>
<th>Specialties</th>
<th>Sub Specialties</th>
<th>Allied Specialties</th>
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<tbody>
<tr>
<td>Cellular Pathology</td>
<td>Coagulation</td>
<td>Education and Training</td>
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<tr>
<td>Clinical Chemistry</td>
<td>Cryobiology</td>
<td>Haemovigillance</td>
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<td>Cytology</td>
<td>Endocrinology</td>
<td>Health &amp; Safety</td>
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<td>Haematology</td>
<td>Immunophenotyping</td>
<td>Informatics</td>
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<td>Immunology</td>
<td>Molecular Biology</td>
<td>Management</td>
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<td>Microbiology</td>
<td>Mycology</td>
<td>POCT</td>
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<td>Tissue Typing</td>
<td>Serology</td>
<td>Quality</td>
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<td>Transfusion Science</td>
<td>Toxicology</td>
<td>Risk Management</td>
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<td>Virology</td>
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<td>Surveillance</td>
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Masters programmes in Biomedical Science are not available in all European countries

- Programmes permitting specialisation in each of the major subject areas are required
- Generic Masters programmes in Molecular Biology do not provide the expert knowledge required to lead and direct clinical laboratories

EPBS convened a meeting with representatives of educationalists from member states to discuss the concept of creating a European Masters in Laboratory Medicine
Aim of European Masters

- To foster and develop advanced knowledge of emerging developments in clinical laboratory medicine and application of research methods
- Making lifelong learning and mobility of BMS in Europe a reality
- To improve the quality and efficiency of specialist Education and training of BMS in Europe
- To provide harmonization of advanced competencies
- To enhance creativity and innovation in the delivery of education and training of Biomedical Scientists
- To enhance partnership between education and training Institutions
MAsteRs in Biomedical Laboratory Science in Europe: MARBLE

- EPBS is working with and facilitating the development of the programme
  - 4 Academic Centres
  - The programme will mix face-to-face and online learning, using a blended approach.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
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<tbody>
<tr>
<td>Semester 1</td>
<td>Semester 2</td>
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<tr>
<td>EU Scholarship &amp; Integration</td>
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<tr>
<td>Taught modules</td>
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<th>Semester 3</th>
<th>Semester 4</th>
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<tbody>
<tr>
<td>Project related tuition</td>
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THE DIAGNOSTIC PARTNER

PURPOSE
1. Ensure a better course of treatment of the patient
2. Ensure a central position for biomedical laboratory scientists in the future health care system

GOALS
• New areas of work
• New ways of working
• New competencies

THE CORE COMPETENCE
Ensuring the quality of the preanalysis, analysis and post analysis
THE DIAGNOSTIC PARTNER – WHAT DOES IT MEAN?

- Proactive
- Cooperative
- Visible
- Greater use of competencies
- Co-responsible for the treatment
- Patient centered organization of work
- Professional dialog about the diagnostics
Laboratory Medicine and Technology

Past 10 Years
- Lab automation
- Consolidation
- Hospital Based
- Laboratory Based

Next 10 Years
- Lab on a chip / POCT
- Genetic / molecular technologies
- Digital technologies
- Distributed services
- Primary care/ outside the lab
- Self testing
- The patient

Test/result service to a knowledge service, transforming clinical pathways and patient experience
Change is Vital

From one Dinosaur to another... a couple of things about extinction....

Oh, crap! Was that TODAY?
‘The life blood of industry is not capital equipment, but human capital’ Bill Gates.

We can expand this truism to encompass the Clinical Laboratory Service.

- The life blood of our Clinical Laboratory Service is neither our automated equipment, nor our laboratory information systems. The human capital is vital to the enterprise.
- It must be fit for purpose