Priorities for EU Research in Biomedical Technologies
Workshop 21st June 2010, Brussels

Introduction

European Commission
Research DG
Directorate HEALTH, Biotechnology for Health
Arnd HOEVELER, Head of Unit
Collaborative research in FP7: The Cooperation programme

**Thematic Priorities**

<table>
<thead>
<tr>
<th>Thematic Priority</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health</td>
<td>6.1</td>
</tr>
<tr>
<td>2. Food, agriculture, fisheries and biotechnology</td>
<td>1.9</td>
</tr>
<tr>
<td>3. Information and communication technologies</td>
<td>9.1</td>
</tr>
<tr>
<td>4. Nanosciences, nanotechnologies, materials and new production technologies</td>
<td>3.5</td>
</tr>
<tr>
<td>5. Energy</td>
<td>2.3</td>
</tr>
<tr>
<td>6. Environment (including climate change)</td>
<td>1.9</td>
</tr>
<tr>
<td>7. Transport (including aeronautics)</td>
<td>4.2</td>
</tr>
<tr>
<td>8. Socio-economic sciences and the humanities</td>
<td>0.6</td>
</tr>
<tr>
<td>9. Security &amp; 10. Space</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**Total for collaborative research**  €32.4 billion
The FP7 Health theme structure and content

• Biotechnology, generic tools and technologies for human health

• Translating research for human health

• Optimising the delivery of health care to European citizens

• Support actions and response to policy needs

**cross-cutting issues:** international cooperation, SMEs, child health, ageing populations, gender-related health issues
Collaborative Research

- **Between countries**
  - Within Europe
  - Europe and non-European countries (incl. USA)
- **Between different types of organizations**
  - Public sector: universities, research centres, hospitals
  - Private sector: large companies, small and medium enterprises (target 15%)
  - Global stakeholders: WHO, TDR, public-private partnerships (PPP)
  - Civil society: non-governmental organizations, patient organisations, individuals
- **Between disciplines**
  - Multi-disciplinarity needed for today’s research challenges
Biomedical Technologies: Key facts

● R&D expenditure ~ 26% of Pharma sector
● Employment ~ 86% of Pharma sector
● Industrial segment of sector consists to major part of SMEs (EUCOMED app. 80% SMEs as members)
● FP7 research funding ~ € 250 mio. so far (55 projects) contrast: € 1 bio. for Pharma (IMI)
● Areas funded in FP7 are rather classical:
  ▶ Analytical/Diagnostic devices
  ▶ Imaging Technologies
  ▶ Pathogen detecting systems

➢ Except: Implanted Biomaterials/Tissue Engineering
ANNEX 1 - EUROPE 2020: AN OVERVIEW

HEADLINE TARGETS

- Raise the employment rate of the population aged 20-64 from the current 69% to at least 75%.
- Achieve the target of investing 3% of GDP in R&D in particular by improving the conditions for R&D investment by the private sector, and develop a new indicator to track innovation.
- Reduce greenhouse gas emissions by at least 20% compared to 1990 levels or by 30% if the conditions are right, increase the share of renewable energy in our final energy consumption to 20%, and achieve a 20% increase in energy efficiency.
- Reduce the share of early school leavers to 10% from the current 15% and increase the share of the population aged 30-34 having completed tertiary education from 31% to at least 40%.
- Reduce the number of Europeans living below national poverty lines by 25%, lifting 20 million people out of poverty.

<table>
<thead>
<tr>
<th>SMART GROWTH</th>
<th>SUSTAINABLE GROWTH</th>
<th>INCLUSIVE GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INNOVATION</strong></td>
<td><strong>CLIMATE, ENERGY AND MOBILITY</strong></td>
<td><strong>EMPLOYMENT AND SKILLS</strong></td>
</tr>
<tr>
<td>EU flagship initiative &quot;Innovation Union&quot; to improve framework conditions and access to finance for research and innovation so as to strengthen the innovation chain and boost levels of investment throughout the Union.</td>
<td>EU flagship initiative &quot;Resource efficient Europe&quot; to help decouple economic growth from the use of resources, by decarbonising our economy, increasing the use of renewable sources, modernising our transport sector and promoting energy efficiency.</td>
<td>EU flagship initiative &quot;An agenda for new skills and jobs&quot; to modernise labour markets by facilitating labour mobility and the development of skills throughout the lifecycle with a view to increase labour participation and better match labour supply and demand.</td>
</tr>
<tr>
<td><strong>EDUCATION</strong></td>
<td><strong>COMPETITIVENESS</strong></td>
<td><strong>FIGHTING POVERTY</strong></td>
</tr>
<tr>
<td>EU flagship initiative &quot;Youth on the move&quot; to enhance the performance of education systems and to reinforce the international attractiveness of Europe's higher education.</td>
<td>EU flagship initiative &quot;An industrial policy for the globalisation era&quot; to improve the business environment, especially for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally.</td>
<td>EU flagship initiative &quot;European platform against poverty&quot; to ensure social and territorial cohesion such that the benefits of growth and jobs are widely shared and people experiencing poverty and social exclusion are enabled to live in dignity and take an active part in society.</td>
</tr>
<tr>
<td><strong>DIGITAL SOCIETY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU flagship initiative &quot;A digital agenda for Europe&quot; to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Europe 2020 strategy – the innovation union
one of seven flagship initiatives:

To improve framework conditions and access to finance for
research and innovation so as to ensure that innovative ideas can
be turned into products and services that create growth and jobs.

Focussing on societal challenges: e.g. climate change, energy and resource
efficiency, **health and demographic change**. Strengthening links in the
innovation chain.

By:

- Completing ERA, developing a strategic research agenda focused on
  challenges **including health and ageing**
- Improving framework conditions for business to innovate
- Creating 'European Innovation Partnerships' between the EU and national
  levels to speed up the development and deployment of the technologies
  needed to meet the challenges identified.
● HEALTH.2011.1.4-2: Tools, technologies and devices for application in regenerative medicine*

- Projects should lead to new tools, technologies or devices which will assist the establishment of regenerative therapies in the clinic
- Specific feature
  - SME-targeted research is designed to encourage SME efforts towards research and innovation (30-50% of EU contribution to SME)
  - Priority will be given to proposals demonstrating that research intensive SMEs play a leading role
- Small or medium-scale focused research projects up to 6 million Euro
- Two-stage application/evaluation procedure

*Pending approval by the EC and the Programme Committee
Policy context:

**Europe 2020 strategy**
**Plan for Research & Innovation - Autumn 2010**

- **Strategy for Biomedical Technologies**
  - Short-term: 5th call FP7
  - Medium-term: 6th + 7th call FP7
  - Long-term: FP8

- **Increase/improvement of SME participation**
  - Cutting-edge R&D
  - Enhancement of collaboration
Priorities for EU Research in Biomedical Technologies
Workshop 21st June 2010, Brussels
Setting the Scene

European Commission
Research DG
Directorate HEALTH, Biotechnology for Health
Bernd RAINER, Policy Officer
Biomedical Technologies: Cutting edge Project Example

- **LIFEVALVE: Living autologous heart valves for minimally invasive implantable procedures**
  - Hi-tech + highly interdisciplinary project
  - Combination of tissue engng. approach with strong clinical component i.e. minimally invasive surgery (and first clinical trials)
  - Coordinator: Simon P. Hoerstrup, UNIV. Zuerich
  - 8 partners, thereof 3 SMEs
    - XELTIS (CH), worldwide leader for tissue engineered cardiovascular implants.
    - PFM AG (DE), specialised in medical technology products in the fields of pathology/histology, OP/anaesthesia, infusion therapy and interventional technologies.
    - QTIS/E BV (NL), focuses on development of tissue engineering applications and enabling technologies.
Health WP 2011: Topic 1.4-2

- Tools, technologies and devices for regenerative medicine. FP7-HEALTH-2011-two-stage. As a complement to topic 1.4-1, this topic focuses on the tools, technologies and devices needed to support clinical application of innovative therapies in regenerative medicine. Non-exhaustive examples include items used in contact with the patient, such as minimally-invasive cell delivery apparatus or scaffolds for cell seeding; items used to prepare cells, such as cell identification, culture, production or sorting equipment; and research tools, such as micro-culture systems for testing techniques. Other possibilities could include cell tracking or cell modification technology. Research on biomaterials and information and communication technologies (ICT) is excluded. Projects should also address scale-up, regulatory work and clinical investigations as appropriate. Research should be multidisciplinary and consortia should be constructed so that results can be exploited by clinical and/or industrial sectors (especially SMEs) as appropriate. Active participation of SMEs will be required for an increased impact of the research proposed.

- Note: Limits on the EC financial contribution apply. These are implemented strictly as formal eligibility criteria. You must refer to the call fiche for details of these limits.

- Funding scheme: Collaborative Project (small or medium-scale focused research project).

- EC contribution per project: max. EUR 6 000 000

- One or more proposals can be selected.

- Expected impact: Projects should lead to new tools, technologies or devices which will assist research in regenerative medicine or the establishment of regenerative therapies in the clinic. Projects should boost the European biotechnology industry, especially the SME sector.

- Justification: On a number of occasions the PC has expressed interest in the medical technology/devices area. This topic should lead to results with rapid industrial or exploitation potential which can be implemented with less regulation than therapies. This industry is largely in the hands of the SME sector. DG ENTR is currently carrying out an exercise on exploratory process on the future of the medical devices sector and considering a recast of legislation. Research on biomaterials and ICT is excluded because these areas are covered by nanosciences, nanotechnologies, materials and new production technologies (NMP) and ICT programmes, respectively.
5th Call - Topic 1.4-2

- Focuses on the tools, technologies and devices needed to support clinical application of innovative therapies in regenerative medicine
- Work on ICT is excluded!
- Biomaterials only as one component of a project
- Should be multidisciplinary and results exploitable by clinical and/or industrial sectors (especially SMEs)
- Active participation of SMEs is required
Timeline

- FP7
  - 6th Call
  - 7th Call
- Medium term
- Long term
- Short term

Strategies for the future

Options/funding instruments:

- Small SME-oriented topics/projects?
- Which areas have priority (short-, medium- and long-term)?
- Highly integrated, programme-type projects? Would they bring anything in addition?
- How to involve Member States?
- Bigger endeavours?
FP7 Health web site: http://cordis.europa.eu/fp7/health

FP7 SME techweb: http://ec.europa.eu/research/sme-techweb/index_en.cfm


SMEsgoHealth: www.smesgohealth.org

SMBioPower: www.smbiopower.eu/

FP6 +FP7 projects database: www.healthcompetence.eu


Registration as an Expert: https://cordis.europa.eu/emmfp7/