

Visions for the Future of European Toxicology

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How to address this topic?

- Describe a set of goals which should be reached
- a proactive agenda based on views of individuals with determined minds
- Describe what one wants to happen - an active analysis of what can be achieved based upon one's views of what is important
- Describe what one thinks will happen - a more passive attitude based upon more or less research
 - Opted for the latter approach at the present time using the SWOT analysis format

What are the future strengths of European toxicology? - 1

- **Several centres of excellence in toxicological research in various European countries**
- **Multicultural and remarkable diversity of toxicological research tradition in Europe**
- **Increasing collaboration within Europe and thereby increased potential for substantial achievements in a variety research areas**

What are the future strengths of European toxicology? - 2

- **Harmonised drug and chemical regulation throughout Europe**
- **An appreciation by the European Commission of the importance of toxicology in regulation**
- **Some healthy pharmaceutical companies with enough money available for toxicology departments**
- **Many active national societies of toxicology**

What are the future weaknesses of European toxicology? - 1

- The standards of toxicology - both at the individual level and at the departmental and faculty levels - are quite variable between and within many countries
- Weak funding situation for toxicological research, especially at the supranational level (EU funding is currently only about 5% of national funding)
- Few graduate programmes in toxicology (17 in Europe vs. 129 in the US as registered on internet)
- Limited career possibilities, both in academia and governmental institutes

What are the future weaknesses of European toxicology? - 2

- The adverse image of toxicology by national research funding bodies (considered a soft science)
- The weak professional image of toxicologists
- The adverse image of toxicology by the public and the school children (use of animals, benefits not as visible as the disadvantages)
- Associated recruitment problems for academia and industry
- EUROTOX has not become the common voice of toxicology as compared to SOT in the US

What are the future opportunities for European toxicology? - 1

- There are obvious opportunities for toxicology to help society in improving quality of life
- Creation of European-wide centres of excellence and networks of research collaboration, training and sharing of expertise should give major benefits
- Multicultural European setting provides a unique opportunity for innovations when different skills and different cultures interact
- Opportunities for toxicology to work alongside and collaborate with the basic sciences

What are the future opportunities for European toxicology? - 2

- Virtual explosion has occurred in the contributions of molecular biology and transgenic technology to help understanding underlying mechanisms for chemical-induced diseases
- Great advances in technology will be giving many new possibilities (e.g. to use stem cells to assist in *in vitro* modelling and to increase non-invasive biomonitoring in humans)
- Development of overarching approaches in assessing risks and benefits of food/food components
- The European Union REACH legislation will necessitate much toxicological expertise and capacity

What are the future threats for European toxicology?

- Collapse of toxicology as an academic discipline in many European countries
- Increasing recognition of shortfall in experienced toxicologists, no agreed strategy to reverse trend
- Discipline does not appear exciting enough to students and young scientists
- Lack of vision in funding of toxicology research and educational programmes, both nationally and at European level
- Poor image of toxicology in society (focus on risks and threats, not on safety and prevention)
- Continued misconceptions regarding need of animals in toxicology

What should be done?

- EUROTOX to establish a commission for the future of European toxicology
- Develop a proactive agenda based on views of individuals with determined minds
- Formulate a set of goals which should be reached
- Describe how these goals can be met
- Contribute to activities for goal fulfilment

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