KL03 **The Pharmaceutical Sciences in 2020**

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International Pharmaceutical Federation, (FIP) / The Board of Pharmaceutical Science (BPS) provide a forum for pharmaceutical scientists to communicate, network and develop their expertise and knowledge. Through BPS, FIP organizes the Pharmaceutical Sciences World Congress (PSWC) and several BPS outreach activities. BPS' mission is to establish and maintain the organization as the leading forum for pharmaceutical sciences throughout the world.

In late 2008, BPS organized an international conference to develop a view on the Pharmaceutical Sciences in 2020. It was a meeting with 30 invited participants from a broad spectrum of backgrounds (scientists, venture capitalists, industrialists, regulators and academicians) sharing their insights into the forces that might determine how the pharmaceutical sciences will look in 2020. In projecting forward, four main topics were discussed: (1) What major research activities will drive drug discovery and development? (2) What will the enabling technologies be? (3) What paradigm shifts will there be in drug discovery, development, regulation and usage? (4) How will the changes in education meet the demands of academia, industry and regulatory institutions? After two days of brainstorm sessions and deliberations, it was concluded that significant shifts in pharmaceutical research, in pharmaceutical business models, and in regulatory approaches are envisioned by the year 2020.

Globally operating companies increasingly will buy in technologies/concepts for new drugs from small private enterprises and the academic world. Product development will be coordinated by these global players. Major activities will be outsourced to specialized companies and institutions. Quality of the work and speed will be decisive factors for success.

Future therapeutic interventions will use new tools provided by new enabling technologies. The paradigm of individualized medicine will be accepted as standard in many therapeutic fields and the borderlines between diagnostics, drugs and medical devices will blur. The projected changes in pharmaceutical sciences will bring about changes in both undergraduate and graduate teaching and the development of interdisciplinary education. At graduate level, the primary backgrounds of students will be more diverse reflecting the need for interdisciplinary research manifesting as increasing interactions with engineering materials science and bioinformatics.

In terms of drug development and regulations, barriers between the different traditional phases of drug discovery and development will blur (e.g. post-marketing surveillance will be integrated with Phase III studies), and there will be a need for more advanced pharmacovigilance systems that interrogate efficacy as well as safety. Regulatory bodies will be asked to increase the transparency of the decision making process. Regulatory authorities will be more transparent in their decision making process and global harmonization will grow.