Nano2Life
Bringing Nanotechnologies To Life

Bringing Nanotehnology to Life - European Network of Excellence

Top 3 major achievements of N2L

The major achievements of Nano2life have been implemented along the three directions of the "**knowledge triangle**", namely **research, education** and **innovation**.

• Research

Future applications of nanobiotechnology are potentially very wide, but their markets are still imprecise, most often as niches. The technical feasibility of many applications has to be validated first by demonstrating proofs of concept and developing prototypes. Therefore Nano2Life has taken advantage of its wide partnership to initiate new collaborations and joint R&D projects in nanobiotechnology, on bi- or multilateral basis (see references about joint R&D projects on **http://www.nano2life.com**, Research section).

The early upstream detection of future trends of nanobio science and technology is carried out by the European Observatory on Nanobiotechnology – EoN - initiated in 2006. Its 20 experts collect and analyse publications, patents, and communications on key predefined fields to monitor weak signals considered as precursors of future trends in nanobiotechnology. EoN has screened so far more than 100 publications, communications and patents and released 4 reports.

Every 6 months, matching events involving public and private partners of N2L are organised at the general assemblies along carefully predefined strategic research topics. More than 35 collaborative projects came out so far out of this process. The key of success of these brainstorming and partnering sessions is their accurate selection of topics and partners as well as the open presentation of the expertise, skills and know-how available within Nano2Life. Finally the N2L mobility scheme gives the opportunity, especially to more than 70 young scientists, to access rare or expensive equipments and know-how, and to visit new partners.

• Education

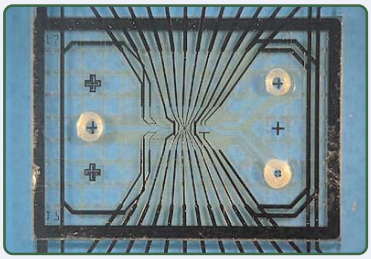
The intrinsic multidisciplinary nature of nanobiotech obliges especially young scientists to reinforce their basic knowledge and/or to train themselves in new disciplines; providing clinicians with insights in technology or physicists with insights in molecular biology are just two obvious examples. Nano2Life implements a very complete set of educational activities addressing these challenges. Nearly 100 young scientists have been trained so far in our summer and research schools or were financially supported to attend existing summer schools More than 15 tutorials have been delivered. More than100 web-casted sessions like tutorials, plenary sessions, and lectures are available on line.

Besides this scientific education scheme, Nano2life has a strong policy in human resource management to build a strong community. Nano2life is not just a juxtaposition of more than 400 scientists from different disciplines with an increasing proportion of young scientists. To boost communication within this very heterogeneous community, several tools have been implemented. Poster sessions were organized at "bazaars" with elevator pitches and "speed dating". A very innovative electronic (e)-mentoring program with currently 16 mentor/mentee couples is also installed especially for young researchers which promotes the development of young researchers. 24 senior people having responsibilities in N2L have also attended the PROGRESS course where they are taught how to organize and lead heterogeneous groups coming from very diverse scientific and cultural backgrounds, developing a very coherent nucleus for a European nanobiotech community.

Thanks to its structuring impact, Nano2Life is considered nowadays as the most lively and active network in nanobiotechnology in Europe, where research results and collaborations can be discussed in an open spirit. This explains why so many collaborations initiated within Nano2Life have been successfully funded. This "family spirit" attracts more than 400 experts. By doing so, Nano2Life is often recognised as a quality label in terms of cooperation and even a trade mark.

Nanobiotechnology in Europe has now **meeting places,** a **visible face** and a **spirit: it's called Nano2Life!!**

Platform for in Vitro Cytotoxicity Testing
Developing "Chips" for the Prediction of Cytotoxicity



A microfluidic chip for cell handling and analysis (photo above)
Details on: http://www.nano2life.com
Contact: Maurice Whelan, Joint Research Centre JRC **(m.whelan@jrc.it)**

• Innovation

Nano2Life continuously explores further applied research areas and opens new avenues for public/private cooperation. What kind of nanobiotech products can companies sell, what devices do medical doctors need for their patients? How can we get the input from both for the identification and definition of the relevant priorities in research and development in nanobiotechnology? These questions were successfully answered in a series of eight prospective workshops on specific application areas like drug development and discovery, in vitro diagnostics, neuro-rehabilitation, nanotechnology based oncology or even environmental monitoring. More than 180 experts, including 44 companies jointly developed a joint vision for the future development of nanotechnology in these eight markets. However a sound, reasonable and concerted development of nanobiotechnology requires bridging the gap between ethicists and scientists or technologists about the new and unaddressed ethical, regulatory and societal concerns. So Nano2Life has set up an Ethical, Legal and Societal Aspects board with 11 experts in philosophy, law, economy, theology, sociology, technology assessment, and medicine. It opens a dialog where both ethicists and R&D project leaders jointly analyse the possible concerns associated with their project or more generally with nanobiotechnology.

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