

Programme

2nd NanoImpactNet Conference For a healthy environment in a future with nanotechnology

Lausanne, Switzerland

9-12 March 2010

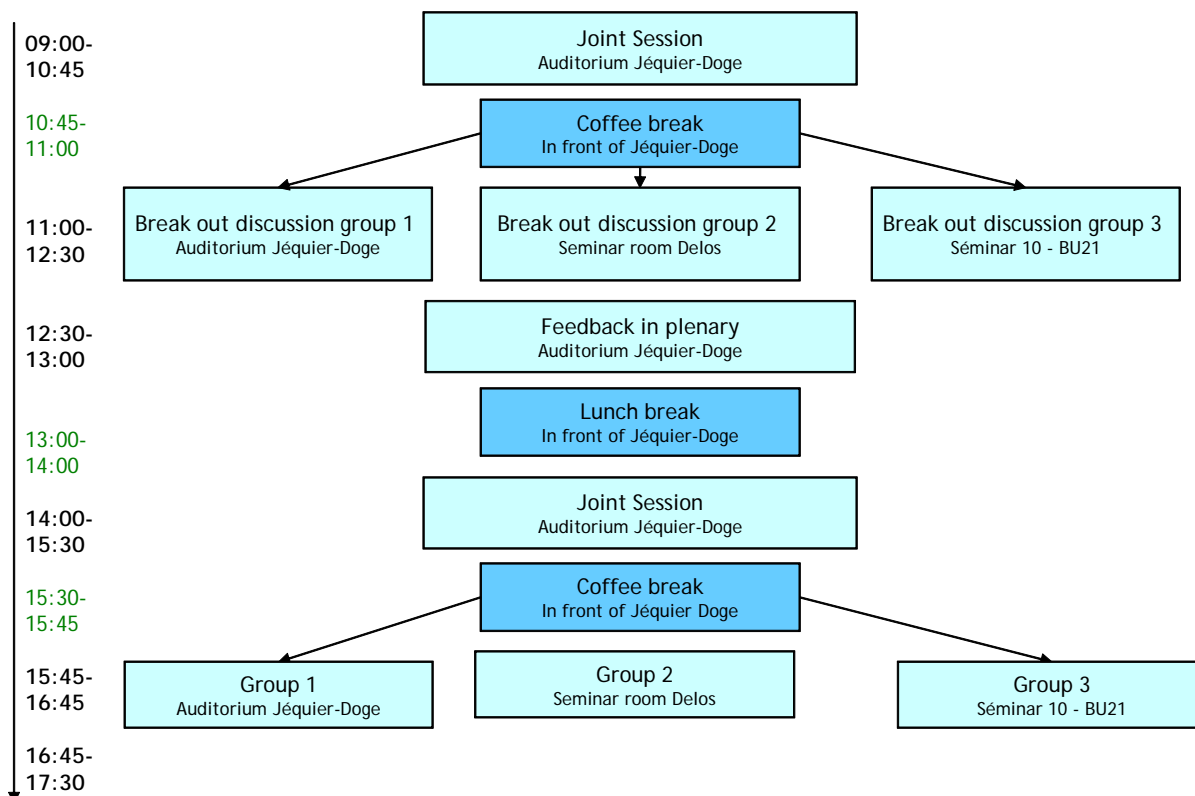


Hosted by the Institute for Work and Health, Lausanne, Switzerland

Event at a glance

Tuesday 9 March 2010

Training School: Handling protocols and standardization of nanomaterials in toxicological research



NanoImpactNet is a Coordination Action under the European Commission's 7th Framework Programme. The 24 institutes organising the NanoImpactNet activities are leading European research groups active in the fields of nanosafety, nanorisk assessment and nanotoxicology.

Contact Information:

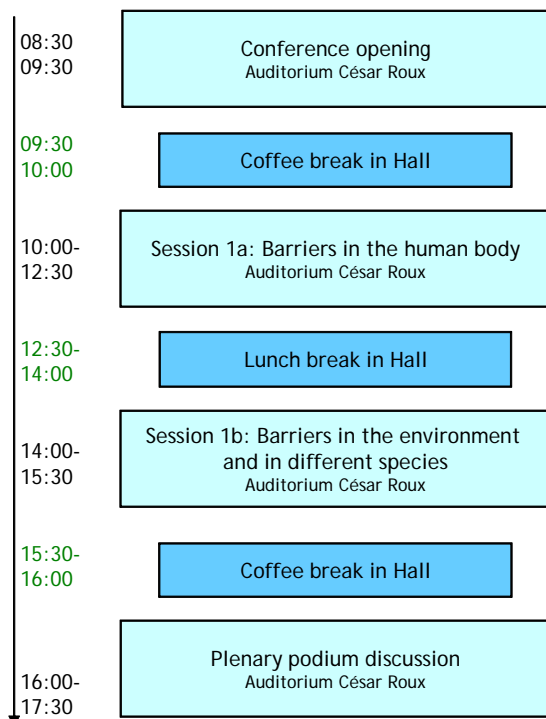
Michael Riediker, PD Dr.sc.nat., Coordinator NanoImpactNet
Institute for Work and Health (Institut universitaire romand de Santé au Travail)
Rue du Bugnon 21
CH-1011 Lausanne
SWITZERLAND

Phone: +41 - 21 314 74 21 Fax: +41 - 21 314 74 30
e-mail: info@nanoimpactnet.eu

Web: <http://www.nanoimpactnet.eu/>

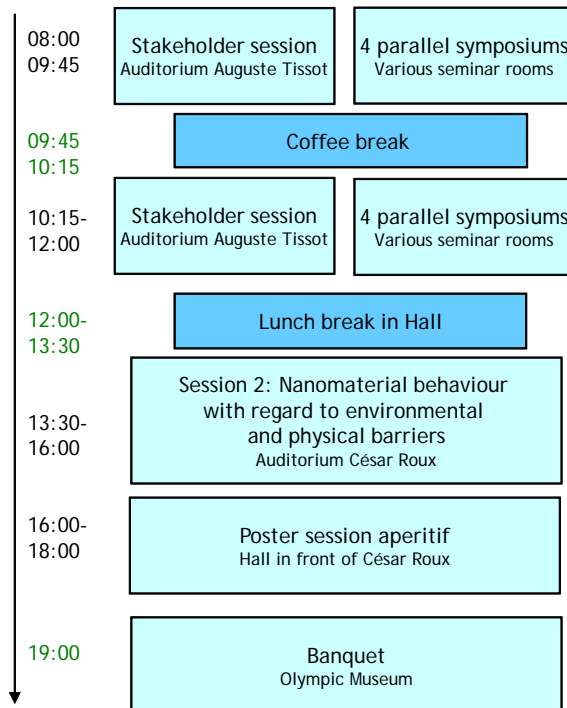
Wednesday 10 March 2010

Integrating conference day 1



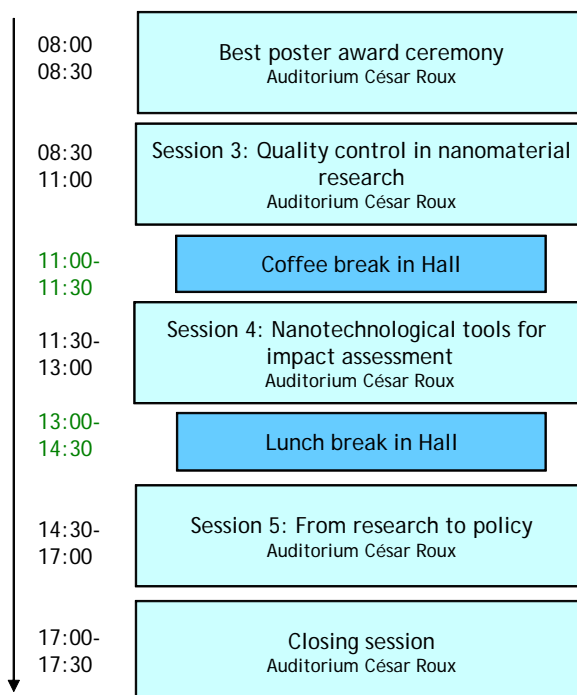
Thursday 11 March 2010

Integrating conference day 2



Friday 12 March 2010

Integrating conference day 3



9 March 2010

Training School: Handling protocols and standardization of nanomaterials in toxicological research

This training school will address higher level issues of 'best practice for safe handling of nanomaterials' to ensure that NanoImpactNet PhD-students and postdoctoral researchers working with nanomaterials are up-to-date with international best practice. It also aims at identifying the needs of the regulatory agencies and looking at developing strategies. This shall ensure that NanoImpactNet research and outputs are designed and implementing regulation for nanotechnologies. This will be key to ensuring that NanoImpactNet plays a leading role in Europe in providing the scientific evidence required for potential nano-regulations.

The format for the training school will be presentations from leading international experts on the topics, followed by break-out discussion groups where participants will delve further into the topics.

The lectures will be recorded and made available through the NanoImpactNet website as part of an ongoing series of training videos.

08:00- 09:00 Registration

09:00- 09:15 Opening and welcome Iseult Lynch, UCD

09:15-13:00 Session 1: Current International best-practice in nanoparticles handling

09:15- 09:45 Safe Nanotechnology in the workplace Mark Hoover, NIOSH

09:45- 10:15 CarbonChip project - Shipping and labelling protocols adopted by industry Michael Cullen, Intel

10:15- 10:45 Risk management practices for safe handling of nanomaterials TBC

10:45- 11:00 Coffee break

11:00- 12:30 Break out discussion groups to determine the minimum safe handling practice that should be implemented in research laboratories Chair: Rosemary Gibson

12:30- 13:00 Feedback in plenary on the minimum safe handling practice that should be implemented in research laboratories Rapporteurs: Sonia Ramirez, Hans Bouwmeester

13:00 - 14:00 Lunch

14:00-17:15 Session 2: From research to regulation: closing the gap

14:00- 14:30 The process of developing regulations and a starting template for what is needed from researchers in terms of reporting of information Peter Hatto, ISO

14:30- 15:00	From research to regulation - how the scientific community can contribute -the case of nanofoods	David Carlander, ESFA
15:00- 15:30	Approaches from pharmaceutical testing - application to nanorisk	Jean-Marc Vidal, EMA
15:30- 15:45	Coffee break	
15:45- 16:45	Break out discussion groups	Chairs: Markus Berges, Maria Dusinska
16:45- 17:15	Feedback in plenary on guidelines for experimental design and results templates to maximise effectiveness of input to standards & regulation	Rapporteur: Iseult Lynch
17:15- 17:30	Final points and feedback on training school	

10 March 2010

Integrating Conference Day 1

07:30- 08:30	Registration	
08:30- 09:30	Opening session & music	George Katalagarianakis, European Commission
09:30- 10:00	Coffee break	
10:00-17:30 Session 1: Interaction between nanomaterials and biological barriers		
10:00- 12:30	Sub-session 1a: Barriers in the human body. Chairs: Iseult Lynch, UCD & Markus Berges, DGUV-BGIA <ul style="list-style-type: none"> • How nanoparticles interact with barriers in the lungs, gut, brain, as well as the many other barriers. • Aspects of nanomaterial uptake, intracellular localisation and cellular fate in the specific cell types found in these organs. 	
10:00- 10:30	Nanomedicine: Delivering drugs across biological barriers with nanoparticulate carriers	Claus-Michael Lehr, Helmholtz-Institute
10:30- 10:45	Mechanisms of uptake of nano-sized latex beads by human alveolar type I epithelial (ATI) cells	Andrew Thorley, Imperial College London (TBC)
10:45- 11:00	Quantification of the cellular uptake and localization of silica nanoparticles in Caco-2 cells	Nicole Daum, Saarland University (TBC)
11:00- 11:15	Time-dependent uptake of aerosolized cerium oxide nanoparticles into lung cell cultures exposed at the air-liquid interface: A kinetic study	David Raemy, University of Bern
11:15- 11:30	Toxicology of cobalt nanoparticle aggregates and cobalt ions: comparative in-vitro study of different cellular models using methods of knowledge discovery from data	Rafi Korenstein, Tel-Aviv University (TBC)
11:30- 11:45	Microarray analysis of effects of silver nanoparticles on an in vitro translocation model of the human intestinal epithelium	Hans Bouwmeester, RIKILT
11:45- 12:00	Evaluating the potential for particulate xenobiotics to develop cancer in the lung using a 3D in vitro model of the human epithelial airway-barrier	Martin Clift, University of Bern
12:00- 12:15	Inflammatory and genotoxic effects of nanoparticles and dust generated from nanoparticle-containing paints and lacquers	Anne Thoustrup Saber, NRCWE
12:15- 12:30	Embryotoxicity of single wall carbon nanotubes: In vitro and in vivo studies	Antonio Pietroiusti, Tor Vergata University (TBC)

	Reserve speakers for sub-session 1a:	Matthew Boyles
	The effect of carbon nanotubes, asbestos and carbon black on cell viability, growth, function and signalling	Andrea Haase
	Cytotoxicity of silver nanoparticles in human macrophages and its link to oxidative stress and functional impairment	Hera Lichtenbeld
	Sensible testing of nanomaterials: 5D virtual microscopy as a high content screening for nanoparticles	Salik Hussain
	Role of Nanoparticle Chemical Composition in Apoptotic Effects	Jukka Sund
	A proteomics study of the toxicological effects of nanoparticles	
12:30- 14:00	Lunch	
14:00- 15:30	Sub-session 1b: Barriers in the environment and in different species. Chairs: Iseult Lynch, UCD & Markus Berges, DGUV-BGIA <ul style="list-style-type: none"> • How nanomaterials interact with different environments and species in different media and situations. • How uptake differs between species. How nanomaterials enter species (exposure routes) and where they locate within organisms following exposure and uptake. 	
14:00- 14:30	Novel methods allow improved understanding of environmental implications of releasing nanometal particles to aquatic ecosystems	Samuel Luoma, University of California Davies
14:30- 14:45	Nanoparticle size, shape and functionality and biological membrane activity	Andrew Nelson, University of Leeds
14:45- 15:00	Is carbon nanotube toxicity on green algae just an artefact of shading and agglomeration?	Fabienne Schwab, Empa
15:00- 15:15	Effects of gold nanoparticles and gold chloride in <i>Chlamydomonas reinhardtii</i>	Renata Behra, Eawag
15:15- 15:30	The effects of nano-Cu compared to aqueous CuSO ₄ in early life stage zebrafish	Benjamin Shaw, University of Plymouth (TBC)
15:30- 16:00	Coffee break	
16:00- 17:30	Plenary podium discussion	

11 March 2010

Integrating Conference Day 2

07:30- 08:00 Registration

08:00-12:00 Stakeholder session "Wrapped up in nano: how to inform the public about nano enhanced food contact materials"

Chair: Geoffrey Hunt, Saint-Mary's University College

From NGOs to the European Parliament, there is rising concern about the possible health impacts of nanoparticles in food and nanomaterials in food related products. NanoImpactNet invites stakeholders to contribute to the debate on how this sensitive and controversial issue can be communicated to the public in the near future. Invited speakers will lead the discussions.

08:00- 08:10 Opening and welcome

Geoffrey Hunt, Saint-Mary's University College

08:10- 08:40 The Role of the European Food Safety Authority for assessing risks of food and food contact materials

David Carlander, European Food Safety Authority

08:40- 09:10 Nanomaterials in food contact materials - An EU legislative overview

Annette Schaefer, EC's Directorate-General for Health and Consumers

09:10- 09:40 Provisional Title: "The Food and Drink Industries view on communicating the use of nanomaterials to the public."

Mike Knowles, Coca-Cola and Confederation of Food and Drink Industries

09:40- 10:10 Coffee break

10:10- 10:40 Provisional title: "What consumers need to know about nanomaterials in their food packaging."

TBC

10:40-12:00 Discussion with the panel of 4 presenters and delegates

Rapporteur : Kaspar Schmid, Institute for Work and Health

08:00-12:00 Parallel sessions (first round): Parallel to the stakeholder session will be held 4 symposiums. Each symposium will be run twice in the course of the morning.

1. Promotion of good practices in research laboratories

To discuss general principles of workplace safety in labs, research facilities and small industrial plants as well as hearing from their peers and experts about situations that are specific to their work.

2. Fate and toxicity of engineered nanoparticles in the aquatic environment

Address the following key points relating to the ecotoxicology of NPs in the aquatic environment: 1- research priorities in aquatic ecotoxicology (which NPs?); 2- fate and behaviour in the aquatic environment: models and methods to be used, e.g., in vitro and in vivo models, mesocosm and bioassays; 3- uptake and biotransformation: mechanisms and toxicity; 4- trophic transfer and bioconcentration: risk for predators including humans; 5- interactions with other toxic aquatic pollutants: changes in

toxicity? These major questions need to be discussed and answered by proper ecotoxicological studies. The interaction with experts of human safety/toxicology will improve comprehensive development of the studies and enhance their practical relevance.

3. Precautionary matrix for synthetic Nanomaterials: A screening tool to assess the need for precautionary safety measures

Present and explain the matrix to a wide audience. The audience should be encouraged to use this tool to evaluate their products and applications. To achieve this, the current situation and the need for considering nanospecific risks, the layout of the precautionary matrix, its strengths and weaknesses, and practical applications of the matrix to specific examples will be presented. There will be time for discussion, questions and suggestions from the participants

4. Nanoparticles and the immune system

There is an obvious need to agree on standardized protocols, methods and endpoints. This would be much facilitated by better communication, which is of course a goal of this symposium. In addition the problem of publication bias has to be addressed. Studies showing no effect are usually not published, and there is also a need for a platform to report on practical experiences concerning e.g. experimental problems, identified artifacts, false positives and false negatives encountered - these are hard to publish. A specific goal of the symposium is to discuss solutions how to exchange this type of practical information. A suitable platform, presumably web-based, would aid in the development of reference methods and support all groups working on immunotoxicology of NP.

09:45- 10:15 Coffee break

10:15- 12:00 **Repetition of parallel sessions (participants change to other sessions):**

1. Promotion of good practices in research laboratories
2. Fate and toxicity of engineered nanoparticles in the aquatic environment
3. Precautionary matrix for synthetic Nanomaterials: A screening tool to assess the need for precautionary safety measures
4. Nanoparticles and the immune system

12:00- 13:30 Lunch

13:00- 13:30 Registration

13:30-16:00 Session 2: Nanomaterial behaviour with regard to environmental and physical barriers

Chairs: Tobias Stöger, Helmhöly Institute & Teresa Fernandes, NU

- Nanomaterial exposures in the environment, taking into consideration the ability of nanomaterials to be transported through different environments based on their different surface properties.
- How particles are able to cross physical environmental barriers and engineered barriers, such as protective equipment.

13:30- 14:00 Behavior of nano-aerosols following emission workplace air and implications for exposure and protection: what do we know?

Derk Brouwer, TNO

14:00- 14:15 Effect of suspended solids and natural organic matter on concentration of cerium dioxide nanoparticles in water

Joris Quik, RIVM (TBC)

- | | | |
|--------------|---|---|
| 14:15- 14:30 | Natural Colloids and Engineered Nanoparticles as Trace Metal Carriers in the Aquatic Systems | Vera Slaveykova, EPFL |
| 14:30- 14:45 | Influence of the initial state of CNTs on their solubilization under natural conditions | Irène Schwyzer, Empa (TBC) |
| 14:45- 15:00 | Synthesis, use and comparison of three Silica nanotracer for studying transport in saturated soils | Elsa Vitorge, CNRS (TBC) |
| 15:00- 15:15 | Nanoparticles emitted during development polyurethane foams with Nanofil®5 | Elżbieta Jankowska, Central Institute for Labour Protection (TBC) |
| 15:15- 15:30 | Mechanisms of Nanoparticle Uptake in Animals: Dealing With the Diversity of Epithelial Structures across the Animal Kingdom | Richard Handy, University of Plymouth |
| | Reserve speaker: | |
| | Mitotic index in <i>Nothobranchius rachovi</i> tissues in the presence of metal oxide nanoparticles | Tatiana Demidova |
| 15:30- 16:00 | Plenary podium discussion | |

16:00-18:00 Poster session aperitif

19:00 Banquet at the Olympic Museum
Address: Quai d'Ouchy 1, 1006 Lausanne

12 March 2010

Integrating Conference Day 3

07:30- 08:00 Registration

08:00- 08:30 Best poster award ceremony

08:30-11:00 Session 3: Quality control in nanomaterial research

Chair: Wolfgang Parak, Marburg University

- Quality control in research: nanomaterial suspension and exposure.
- Agglomeration and de-agglomeration of nanomaterials in both air and liquids.
- Issues surrounding protein absorption to the surface of nanomaterials.
- Quality control of nanomaterial suspensions and exposure systems.

08:30- 09:00 Physicochemistry of interactions between Nanoparticles and Biomolecules Heinrich Hofmann, EPFL

09:00- 09:15 Towards standardised methods for in vitro nanotoxicology Joanna Seiffert, LGC

09:15- 09:30 Stable particle concentration for measurement device validation and for exposure studies Kaspar Schmid, Institute for Work and Health (TBC)

09:30- 09:45 Using collagen coating to improve data quality in in vitro nanoparticle testing Birgit Gaiser, Edinburgh Napier University (TBC)

09:45- 10:00 Nanoparticle size measurements in complex media by dynamic light scattering Benoît Maxit, Cordouan Technologies

Reserve speaker:

TiO₂ nanoparticles dispersable in biocompatible fluids for toxicological studies Sonia Ramírez-García

10:00- 10:30 Plenary podium discussion

10:30- 11:00 Coffee break

11:00-13:00 Session 4: Nanotechnological tools for impact assessment

Chair: Harald Krug, Empa

Nanotechnology as a tool for hazard identification and/or risk assessment, thus addressing how research in the area of nanotechnology safety is facilitating the implementation and use of these products by society.

11:00- 11:30 Measurement, imaging and delivery of nanoparticles: lessons from interdisciplinary interactions Paul Borm, Zuyd University

11:30- 11:45 The behavior of silver nano-textiles during washing Bernd Nowack, Empa

11:45- 12:00 Alternative Testing Method for Nanotoxicity of AgNPs using Negative-Charged Vesicle Younghun Kim, Kwangwoon University (TBC)

12:00- 12:15	Amperometric Biosensor Based on Ultramicroelectrode Arrays for Monitoring the Impact of Nanoparticles on Aquatic Microorganisms	Guillaume Suarez, EPFL (TBC)
12:15- 12:30	The Karlsruhe Exposure System for the assessment of the lung toxicity of nanoparticles	Sonja Mülhopt, Karlsruhe Institute of Technology (TBC)
	Reserve speaker: A novel comprehensive evaluation platform to assess nanoparticle toxicity in vitro	Cordula Hirsch
12:30- 13:00	Plenary podium discussion	
13:00- 14:30	Lunch	
14:30-17:00	Session 5: From research to policy Chair: Michael Riediker, Institute for Work and Health Nanomaterial research and development is not only determined by academic and industries but also by governments and policy makers. Scientists can contribute to policy when communicating research findings effectively.	
14:30- 15:00	Nanotechnology - research needs from an EU policy perspective	Eva Hellsten, EC
15:00- 15:30	Nanotechnology - An Opportunity to Shape Good Policy by Effectively Converting Research Into Practice	Chuck Geraci, NIOSH
15:30- 15:45	Carbon nanotubes - how much do we know about their risks for humans?	Karin Aschberger, EC, JRC (TBC)
15:45- 16:00	Towards REACH guidance on nanomaterials	Frans Christensen, EC, JRC
16:00- 16:15	Redefining Risk Research Priorities for Nanomaterials	Khara Grieger, Technical University of Denmark
16:15- 16:30	Working with scenarios to approach governance of nanotechnology and risk	Alain Kaufmann, Unil (TBC)
	Reserve speakers: From Research to Policy: The Researchers Perspective	Albert Duschl
	JRC work in support to the OECD Working Party on Manufactured Nanomaterials	Juan Riego Sintes
	Production and application of nano-bio-particles - the crossroad of nanotechnology, biotechnology and medicines regulations	Ursula Jenal
16:30- 17:00	Plenary podium discussion	
17:00- 17:30	Closing session	
17:30	Closing aperitif	

How to get to the 2nd NanoImpactNet Conference CHUV, Lausanne, Switzerland

Travelling from Geneva Airport to Lausanne

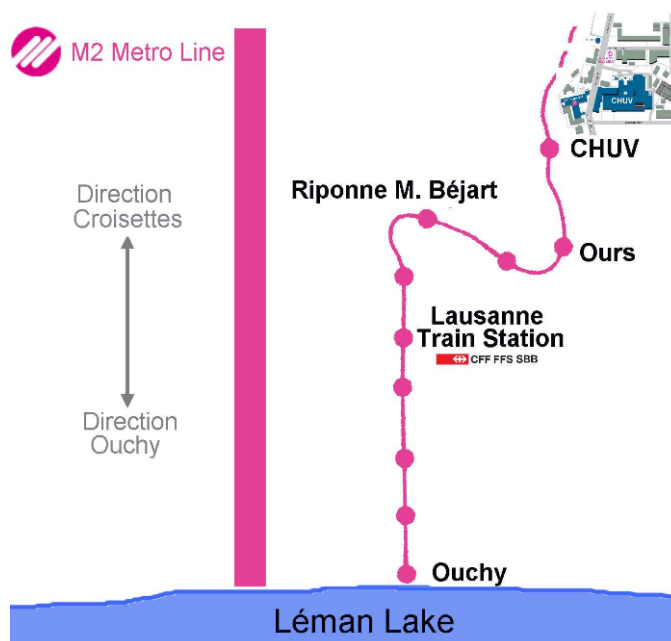
The fastest and cheapest way to get from Geneva airport to Lausanne is by train. It is a 45min ride. From the airport arrival, follow the signs for the train station (CFF/SBB or gare) which is situated inside the airport (3min walk). For train timetables go to www.rail.ch. Tickets can be purchased at the train station (counter or machine, cash and credit cards accepted) or over the internet (www.rail.ch). When returning to the airport, make sure you select Geneva Airport and not Geneva, which is one stop too early. A one-way 2nd class ticket costs 25 CHF.



Travelling from your hotel to the conference location

Lausanne is a small city, but it is a hilly one. The conference venue - the "CHUV" - is easily accessible: a 20-minute walk from hotels in the city centre, but it is uphill. However, if you wish to walk we recommend you ask your hotel for a map (one will be included in your conference bag) and give yourself sufficient time. The topography of Lausanne is characterized by steep slopes and side-valley where visitors easily can get lost.

Most hotels provide a free public transport ticket for their guests. From a hotel situated in the city centre or near the train station, take the M2 metro towards "Croisettes" (uphill), to the "CHUV" stop, which is where the conference will take place. See map of the metro line below.



If you need to take a taxi, tell the driver to bring you to "CHUV, entrée principale".
Parking is expensive and difficult to find. We recommend leaving your car at home.

The metro stop at Lausanne train station



When you walk out of Lausanne train station's main entrance hall, the m2 metro across the street will take you to the city centre or the conference location. Look for a pink symbol and «metro».

Getting from the CHUV metro stop to the conference

When you arrive at the CHUV metro stop, go up the stairs at the rear end of the platform. Photo 1 shows the view of the main CHUV building that you will see when you get at the top of these stairs. Photo 2 is of the CHUV hospital's main entrance, which has a green arched portal and a large revolving door. Once in the main building, go down the main entrance corridor and turn left at the information desk. Go straight ahead, and stick to the left of the corridor (left past the green flower store) until the end of the building and the auditorium area where the registration desk is situated. During registration times, NanoImpactNet staff will guide you to the registration desks.



(Photo 1) View of the main CHUV building when exiting the metro.



Photo 2: CHUV main entrance



Photo 3: CHUV main entrance corridor

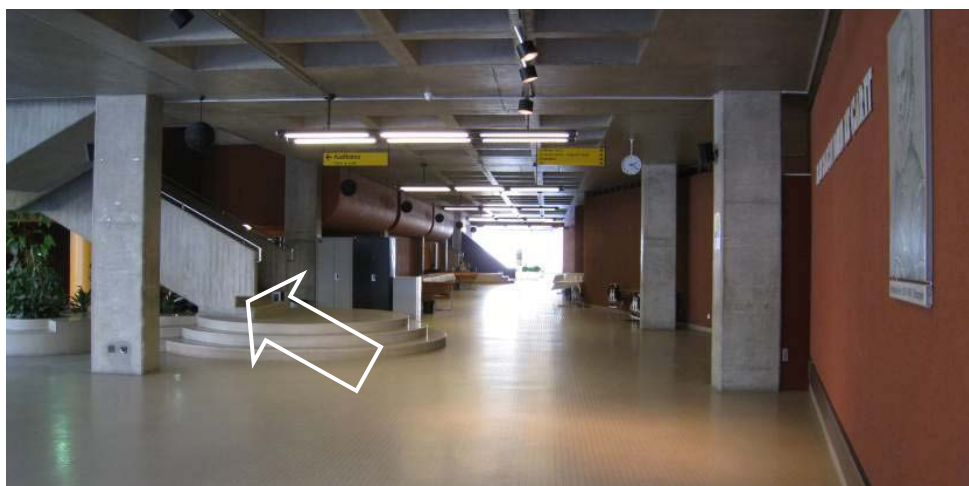
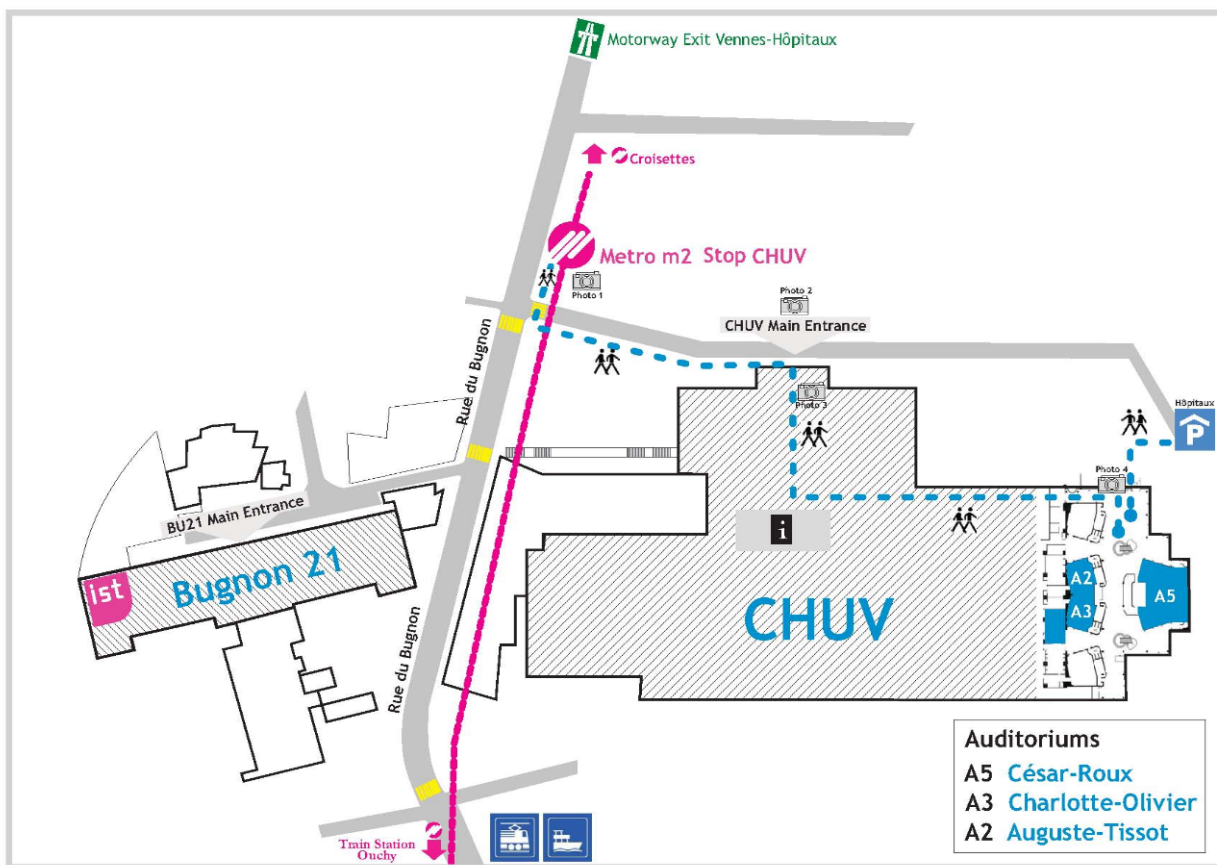
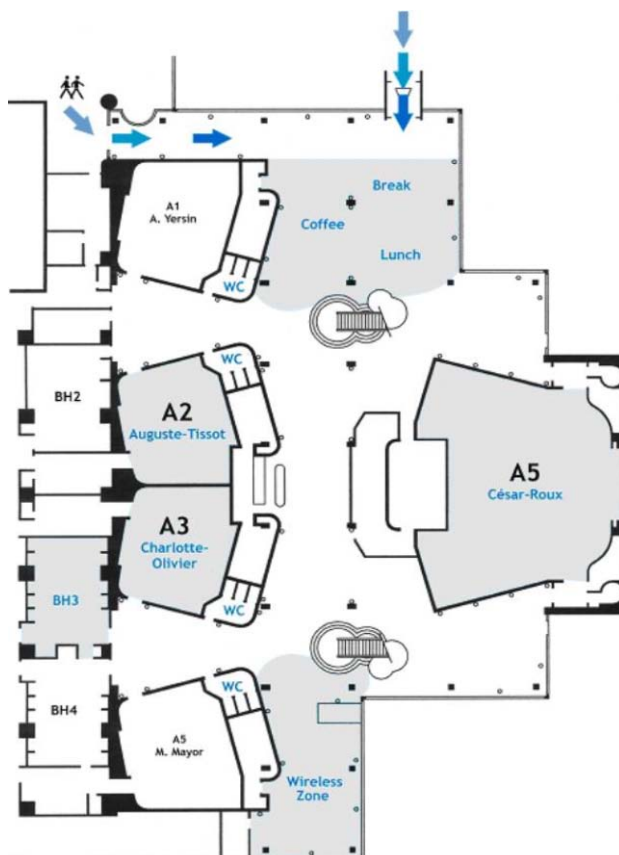


Photo 4: Auditorium and registration zone

CHUV Map



Auditoriums Map



Guidelines for presenters

Oral presentation guidelines

If you have an oral presentation, please note that you will not be able to use your private computer. You can either send your presentation before the event at info@nanoimpactnet.eu or have your presentation ready on a USB key/external hard drive when you register (at the latest at 8:30 the morning of the event). Please be aware when you prepare your presentation that we have a Windows XP-environment. Please check in advance that presentations made on a Mac work on PCs.

Poster presentation guidelines

The standard size for posters is: height 120 cm x width 90 cm, the absolute maximum size would be the size of the poster boards: height 160 cm x width 120 cm. Only a limited number of horizontal poster boards (height 120 cm x width 160cm) are available. If you require a horizontal poster, you must ask us first.

The guided poster presentation session is programmed for the second day of the conference, 11 March, but please put your poster up at anytime on Wednesday morning.

Wireless

Wireless access will be available in the lecture hall section of the building. However, we do not provide computers. Please bring your own device. Details on how to connect to the WiFi will be communicated at the conference.

Conference location

Lausanne is a city situated in the French-speaking part of Switzerland on the shores of Lac Léman also known as Lake Geneva. This traditional city is located approximately 60 km north-east of Geneva and faces the French Alps while the Jura mountains are to its north-west. The headquarters of the International Olympic Committee as well as the headquarters of the Court of Arbitration for Sport are located here. Also the region surrounding Lausanne is famous in Switzerland for its wine production. For more information, go on the city's official website (www.lausanne.ch).

Find out more about Lausanne's key features, such as architecture, museums, restaurants, etc. in [this brochure](#)¹. Here is an extract: "The setting of Lausanne is extremely picturesque: it is hardly surprising that the International Olympic Committee has been based here since 1914. The town is built on three hills, surrounded by vineyard-covered slopes, with Lake Geneva at its feet. Rising impressively from the opposing French lakeshore are the Savoy Alps. The attractive old town is largely car-free. Small alleyways with cafes and boutiques shape the streetscape in the medieval city centre. The old town is dominated by the cathedral, which is regarded as Switzerland's most impressive piece of early Gothic architecture. Lausanne was a diocesan town for over a thousand years. Shopping streets can be found surrounding the cathedral as well as in the pretty waterfront area of Ouchy. Switzerland's only «metro» connects the various parts of the town and eases travel in this incline-based town."

Hotels in Lausanne

Many events are taking place in Lausanne in March 2009 so we advise you to book your hotel as soon as possible. Here is a link to a list and description of hotels in Lausanne (<http://www.lausanne-tourisme.ch/DataDir/LinkedDocsObjDir/16077.pdf>). We recommend you choose a hotel close to [the M2 Metro line](#)² which runs from the lake side at Ouchy to the conference venue at the CHUV. Most hotels will provide their guests with a travel card available on the entire Lausanne public transport system.

¹ <http://www.lausanne.ch/DataDir/LinkedDocsObjDir/2103.pdf>

² http://web-anc.t-l.ch/m2_old/corps_m2_trace.html

About NanoImpactNet

NanoImpactNet is the European network on the health and environmental impact of nanomaterials. It is a platform for exchange about research ideas and to bring together scientists, industry, policy makers and civil society to ensure the safe and responsible development of nanomaterials.

NanoImpactNet is a Coordination Action sponsored through the EC's 7th Framework Programme for a duration of four years. NanoImpactNet is part of the European Commission's commitment to define a robust European strategy on nanotechnology which includes health, safety and environmental issues. Launched in April 2008, this multidisciplinary network's objective is to create a scientific basis to support the definition of regulatory measures and the implementation of legislation across the EU.

NanoImpactNet is first and foremost a network and a platform for exchange about research ideas. It consists of 24 partner institutes and over 300 members. By coordinating research between European scientists from over 20 countries, NanoImpactNet will help to harmonise methodologies and communicate results, initially across Europe, but later worldwide, boosting international cooperation.

The numerous NanoImpactNet workshops provide opportunities to share and discuss state-of-the-art knowledge on nanoimpact research. They will identify knowledge gaps, define strategies to address these gaps and train research staff and students.

NanoImpactNet embraces strong two-way communication to ensure open and efficient dissemination of information to all stakeholders. Whilst representing the scientific community's findings it will continue to obtain input on the needs and concerns of other parties. With the European Commission's support guaranteed until 2012 NanoImpactNet will be the focal point for the exchange of information between researchers, industry and civil society in Europe.

For more information visit www.nanoimpactnet.eu or email us at info@nanoimpactnet.eu

NanoImpactNet is a European Commission-sponsored FP7 project



The NanoImpactNet's "2010 Integrating Conference" Gold sponsor is:



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