



Earth system, biodiversity and sustainable development

Within the framework of the 3i University Network we wish to launch a thematic cluster on **environmental issues** dealing with the above topics in order to promote cross-border collaboration between academic staff and their PhD/Master students, as well as interaction with the civil society/private sector and regional governments.

The Earth System science approach offers the appropriate conceptual framework to assess past, present and future processes driving and shaping global change phenomena, including their climatic and anthropogenic dimension, and their impact to its four interconnected spheres (atmo-, hydro-, geo- and biosphere). In order to decipher the impact of global change to natural and human-influenced geo- and ecosystems, an in-depth understanding is required of processes that take place at different spatial (local/regional/global) and time (ecological/historical/geological) time scales.

One of our main goals is to understand and evaluate the impact of climate change and of anthropogenic activities on both natural and anthropogenic ecosystems, especially those present in our Regions. In order to identify possible solutions for the limitation/reduction of modern environmental perturbations and optimal conservation of biodiversity, we need to design specific strategies for sustainable development and management of our natural resources.

The 2-day workshop organised at the CERLA amphitheatre (Cité Scientifique, ULille)

on June 23rd and 24th, 2022

intends to further explore the potential of crossborder collaborations and to launch the specific 3i Univ. Network cluster.

Taniel Danelian (ULille), Robert Speijer (KULeuven), Koen Sabbe (UGent),

June 23rd

10h00 - 10h05 **Taniel Danelian (ULille), Robert Speijer (KULeuven), Koen Sabbe (UGent)** Welcome

10h05 - 10h20 **Taniel Danelian (ULille)** *The Lille Institute on Environmental Sciences (IREPSE)*

10h20 - 10h35 **Philippe Muchez (KULeuven)** *The Faculty of Science in the KU Leuven*

10h35 - 10h50 **Cnudde Veerle (UGent)** *The Faculty of Science in the University of Gent*

10h50 - 11h05 **Xavier Vekemans (ULille)** *The ClimiBio Regional Project in environmental sciences*

Coffee break

11h45 - 12h00 **Ellen Decaestecker (KU Leuven)**

The role of genetic diversity and microbiomes in fast adaptation to changing environments

12h00 - 12h15 **Camille Roux (ULille)** – *How fast species diversify : insights from genomics in plants and animals*

12h15 - 12h30 **Hugo Gante (KU Leuven)** - *Genomes, environment and fish tales*

12h30 - 12h45 **Willem Stock (UGent)**

Valorizing seaweed, from fundamental biology to offshore cultivation

Buffet lunch

14h15-14h30 **Cnudde Veerle (UGent)**

The possibilities of X-ray imaging at the pore scale to unravel geological questions

14h30-14h45 **Sébastien Clausen (ULille)**

Applications of X-ray tomography and surface scanning in paleobiology

14h45-15h00 **Maarten Van Daele (UGent)**

Unraveling geo-, climate and environmental hazards in sedimentary records

15h00-15h15 **Jean-Yves Reynaud (ULille)**

Geomorphology and stratigraphy of the Holocene coastal plain : the Ghyvelde dune case study

Coffee break

16h00-16h15 **Patrick Degryse (KULeuven)**

Human-environment interactions: archaeometry and geoarchaeology at KU Leuven

16h15-16h30 **Sandrine Huber (ULille)**

Human-environment interactions: archaeometry and geoarchaeology at ULille

16h30-16h45 **Philippe Muchez (KULeuven)** - *Mining and Sustainability*

16h45-17h00 **Céline Toubin (ULille)**

The « Science for a Changing Planet » Graduate Programme of the University of Lille

17h00-17h30 Discussion on future activities and opportunities within the 3i University Network

17h30-19h00 Guided tour to the Research Greenhouse and discussions over an aperitif

June 24th

10h00 - 10h15 **Filip Volckaert (KULeuven)**

The Keuven 2030 Urban Lab and Sustainable Development at KULeuven

10h15 - 10h30 **Damien Cuny (ULille)**

Air quality biomonitoring: from diagnosis to territorial health inequalities

10h30 - 10h45 **Stéphane Thys (ULille)**

The objectives and funding opportunities of the 3i University Network

10h45 - 11h00 **Maxime Pauwels (ULille)**

Policy and efforts of Sustainable Development at the University of Lille

Coffee break

11h30-11h45 **Dries Bonte (UGent)** *Integrating ecology and evolution in spatial ecology*

11h45-12h00 **Maxime Pauwels (ULille)**

Sublethal effects of metal toxicity and the measure of plant fitness in ecotoxicological experiments

12h00-12h15 **Koen Sabbe (UGent)** *Ecological and evolutionary research on microalgae*

12h15-12h30 **Robert Speijer (KULeuven)**

Biotic response to past global warming events : learning from the past

12h30-12h45 **Laurence Agouridas (ULille)** *Funding opportunities with the Interreg programme*

Buffet lunch

14h00 - 14h30 **Kevin Van Geem (UGent)** *Sustainable Chemistry at Gent University*

14h30 - 14h45 **Guillaume Vanhove (ULille)**

Combustion of oxymethylene ethers as an alternative energy carrier

14h45 - 15h00 **Louis Cony (UGent)** *Assessment of indoor air quality costs in office buildings*

15h00 - 15h15 **Benjamin Hanoune (ULille)**

Assessing air quality and individual exposure with miniature sensors

15h15 - 15h30 **Klaas De Jonge (UGent)**

Building physics for sustainable building development and indoor air quality management

Coffee break

16h00-16h15 **Denis Petitprez (ULille)**

Atmospheric physics and chemistry : an integrated approach from the lab to the real atmosphere

16h15-16h30 **Pierre Boulet (ULille)**

Ultrar-low energy consuming Neural Networks applied to studies of coastal erosion: the European project Aprovis 3D

16h30-17h00 Discussion on future activities and opportunities within the 3i University Network