

Iseult Lynch, Eugenia (Éva) Vasami-Jones and the NanoMILE consortium

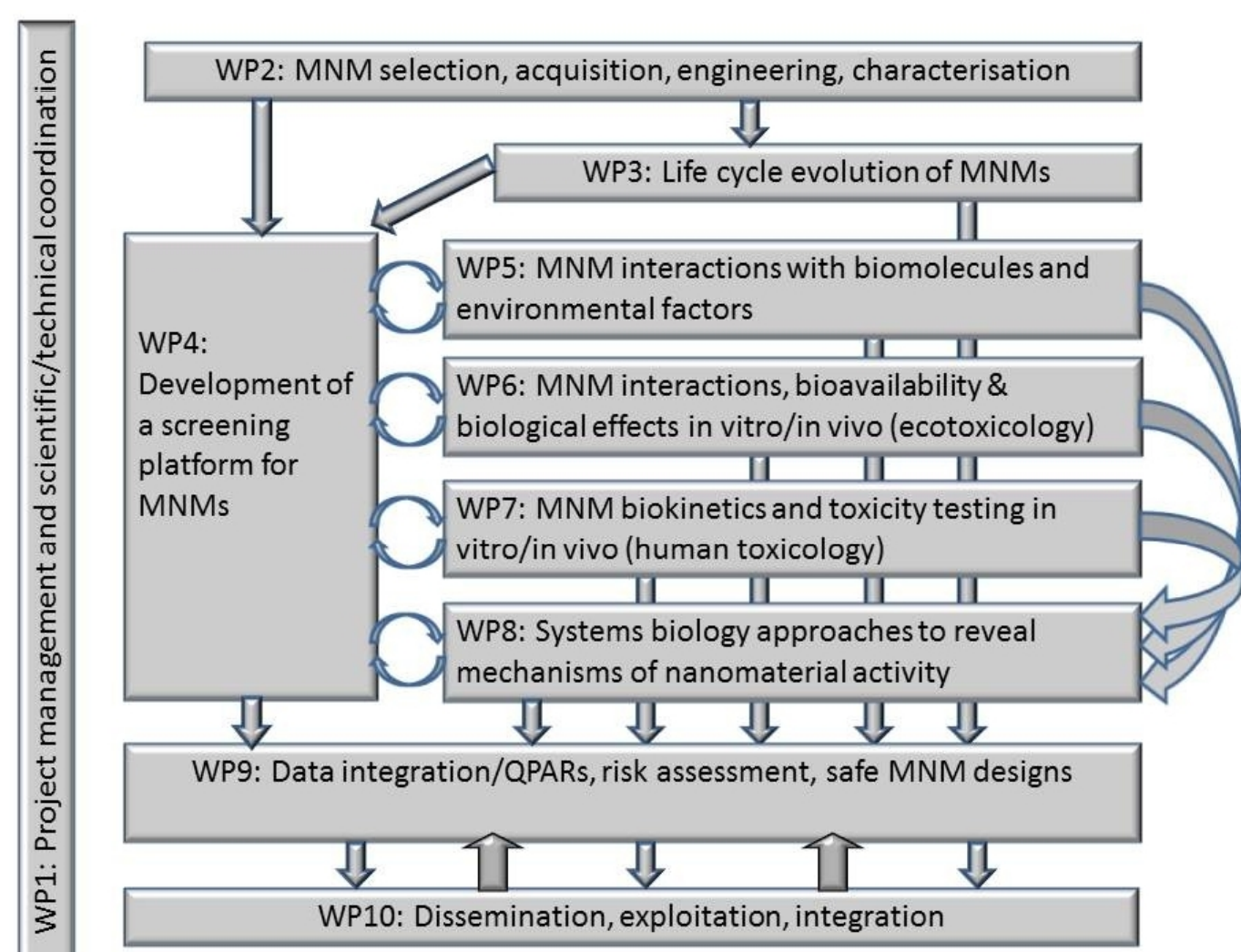
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## Objectives

To formulate an intelligent and powerful paradigm for the mode(s) of interaction between manufactured Nanomaterials (MNMs) and organisms or the environment;

- ⇒ development of a single framework for the classification of MNMs safety, and
- ⇒ the creation of a universally applicable framework to enable informed consent/decisions concerning nanosafety.

## Project Structure



A wide range of manufactured nanomaterials (metal and carbon based) will be characterized throughout their life cycle (**WP2, WP3**). Using a high throughput screening process, a streamlined testing and selection platform will be developed and applied to refine the MNMs selection (**WP4**). The selected MNMs will undergo focused testing relative to their mechanism(s) of effects on living systems and the environment (**WP5-8**). An iterative experimental / modeling process will integrate the data into quantitative structure or properties / effects relationships (**WP9**).

## Key features of NanoMILE

Focus on high through-put methods / screening approaches linked to detailed mechanistic studies and systems biology

Development of systematic libraries of MNMs varying by one property at a time (insofar as possibly at present)

Assessment of Fresh and “aged” MNMs – towards realistic exposure scenarios

Iterative process towards **safer by design** MNMs

Building on efforts from NanoReTox and other FP7 projects

## NanoMILE quick facts

**Coordinator:** Eugenia (Éva) Vasami-Jones  
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**Project start date:** 1<sup>st</sup> March 2013

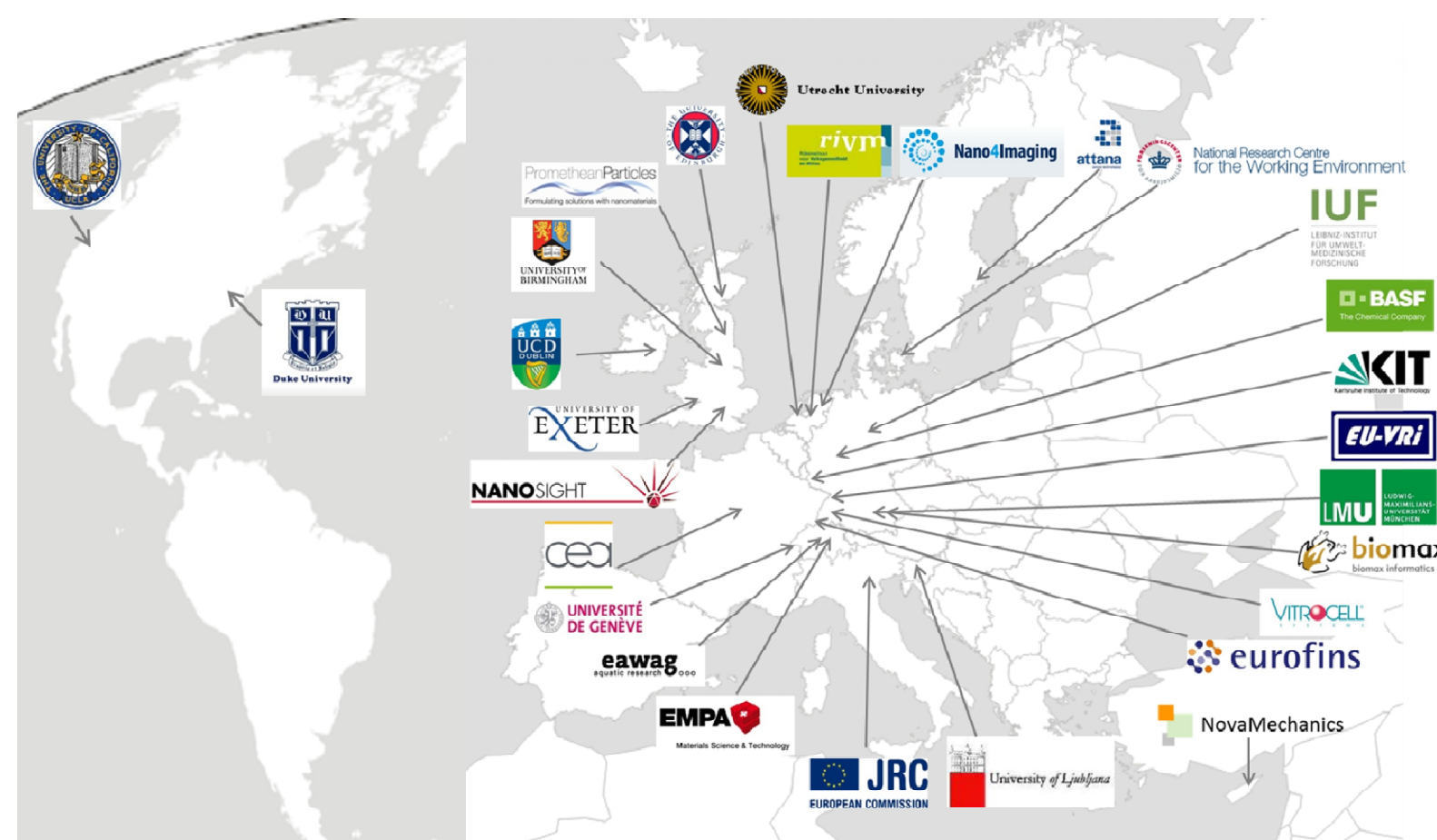
**Project duration:** 48 months

**Project budget:** 13M€; EC contrib. 9.6M€

**Project Website:** [www.nanomile.eu-vri.eu/](http://www.nanomile.eu-vri.eu/)

## Project Consortium

16 EU academic / research partners, 2 US partners (Duke and UCLA)  
8 SME partners (2 NM manufacturers, 2 data management / dissemination, 1 cell culture models, 3 instrument manufacturers)  
2 large industry – Eurofins and BASF



## Expected Impacts

- ✓ A set of documented protocols for nanomaterials synthesis, characterization & safety assessment, feeding into ongoing standardization activities and building on previous projects;
- ✓ MNMs libraries gathering data on structure and transformation in contact with living systems and their connection to toxicity, ecotoxicity, and fate and behavior;
- ✓ Mechanistic and quantitative (QSAR/QPAR) descriptions of MNMs properties, and of effects of life-cycle MNMs modifications (aging, interactions with the environment);
- ✓ A source for MNMs risk-assessment (dose-response relationships for various dose metrics, target body tissues, biomarkers, biodistribution/ biopersistence);
- ✓ A framework for MNMs classification according to their biological or environmental impacts;
- ✓ A handbook of best practice (in coordination with the NanoSafety cluster).