University of Birmingham

Dr Iseult Lynch PhD, MBA

Lecturer in Environmental Nanosciences

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About

Dr Iseult Lynch joined the academic staff at the University of Birmingham as Lecturer in Environmental Nanosciences in March 2013. She has a very broad overview of all aspects of nanomerials safety assessment and the data requirements, having served as Chair of the EU Nanosafety Cluster Working Group (NSC WG) on databases for the last 2 years (and as co-Chair of the Hazed WG prior to that), as well as being theme editor for the Materials and classification section of the NSC Vision2020 research roadmap (under review for publication in June 2013). Prior to the University of Birmingham she was Strategic Research Manager at the Centre for BioNano Interactions in University College Dublin, where she was instrumental in the development and implementation of the QualityNano research infrastructure for nanosafety assessment.

Qualifications

BSc. (Hons) Chemistry (1995)

PhD (Chemistry, 2000)

MBA (2012)

Biography

Dr. Iseult Lynch undertook her PhD in Physical Chemistry at University College Dublin developing responsive polymeric materials for use in medical devices and as tissue growth substrates. She subsequently did several years of postdoctoral research at Physical Chemistry 1, Lund University in Sweden, including as an EU Marie Curie Fellow, investigating several aspects of colloid and interface science and biophysics. She returned to University College Dublin in 2006 where she lead the nanoparticle synthesis and bio-characterisation group at the **Centre for BioNano Interactions (CBNI) (http://www.cbni.eu)** . She then became the Strategic Research Manager for CBNI, and was instrumental in securing multiple large scale national and EU funding bids. In March 2013 she joined the University of Birmingham as a Lecturer in Environmental Nanosciences.

Teaching

Dr Lynch will act as undergraduate admissions tutor for Environmental Science. She will also lead the re-launch of the MRes in Health & Environmental Impacts of Nanoscience and Nanotechnology

Postgraduate supervision

Interested students should contact me by email to discuss potential funding opportunities.

Research

Research interests

- Synthesis of novel composite polymeric materials for biomaterials and environmental applications, such as controlled release and delivery, environmental remediation and Nano(eco)toxicology.
- Nanoparticle interactions with biomolecules in the environment (natural organic matter, secreted proteins, organic pollutants, etc.) – the “eco-corona” and secondary pollutant effects
- Determination of the fate and behavior of nanomaterials in the environment
- Development of high throughput screening applications: nano(eco)toxicology, bionanointeractions and assessment of environmental fate of nanomaterials.
- Impact and risk assessment of nanomaterials / nanoproducts / nanomedicines.

Other activities

- Editorial Board member for the online journal Particle & Fibre Toxicology.
- Partner and lead scientist (PI) in EU FP7 Marie Curie Initial Training Network on NanoSafety (NanoTOES) which provides training for young researchers (**www.nanoteos.eu (http://www.nanoteos.eu/)**).
- Co-PI and WP Leader in QNano, the UCD-coordinated EU FP7 Research Infrastructure for quality in nanosafety assessment.
- Work Group Leader for WG4 Databases in the EU Nanosafety Cluster (**www.nanosafetycluster.eu (http://www.nanosafetycluster.eu/)**)
- Editor / Theme Leader for the NanoSafety Cluster Vision 2020 strategic research document, leading the sections on nanomaterials identity and infrastructure needs for nanosafety.
- Representative in the COST Action TD1204 Modelling Nanomaterial Toxicity (MODENA).

- International Advisory Board member of the EU FP7 project NanoStair "Establishing a process and a platform to support standardization for nanotechnologies implementing the STAIR approach".
- Organiser & Scientific Committee for the QNano Conference 2013.
- Member of Food Safety Authority of Ireland (FSAI) Expert Panel on nanotechnologies in food, resulting in the report: **The Relevance for Food Safety of Applications of Nanotechnology in the Food and Feed Industries (http://www.fsai.ie/resources_publications.html)**, October 2008.
- Member of European Food Safety Authority (EFSA) Working Group on Nano in Food (2008-2009), resulting in the publication: **The Potential Risks Arising from Nanoscience and Nanotechnologies on Food and Feed Safety (http://www.efsa.europa.eu/en/efsajournal/pub/958.htm)**

Publications

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2. Stefaniak, A.B., Hackley, V.A., Roebben, G., Ehara, K., Hankin, S., Postek, M.T., Lynch, I., Fu, W.E., Linsinger, T.P., Thünemann, A.F. Nanoscale reference materials for environmental, health and safety measurements: needs, gaps and opportunities. Nanotoxicology. 2012 Nov 7. [Epub ahead of print]
3. Tenuta, T., Monopoli, M.P., Kim, J., Salvati, A., Dawson, K.A., Sandin, P., Lynch, I. Elution of labile fluorescent dye from nanoparticles during biological use. *PLoS One*. 2011;6: e25556.
4. Mahmoudi, M., Lynch, I., Ejtehadi, M.R., Monopoli, M.P., Bombelli, F.B., Laurent, S. Protein-nanoparticle interactions: opportunities and challenges. *Chem Rev.* 2011, 111:5610-5637.
5. Lundqvist, M., Stigler, J., Cedervall, T., Berggård, T., Flanagan, M.B., Lynch, I., Elia, G., Dawson, K. The evolution of the protein corona around nanoparticles: a test study. *ACS Nano*. 2011, 5:7503-7509.
6. Nic Ragnaill, M., Brown, M., Ye, D., Bramini, M., Callanan, S., Lynch, I., Dawson, K.A. Internal benchmarking of a human blood–brain barrier cell model for screening of nanoparticle uptake and transcytosis. *European Journal of Pharmaceutics and Biopharmaceutics*, 2011, 77, SI 360-367.
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10. Walczyk, D., Baldelli-Bombelli, F., Campbell, A., Lynch, I., Dawson, K.A. What the Cell "Sees" in Bionanoscience, *JACS*, 2010, 132, 5761-5768.
11. Lynch, I., Salvati, A., Dawson, K.A.Protein-nanoparticle interactions: What does the cell see? *Nature Nanotechnol.* 2009, 4, 546-547.
12. Naha, P.C., Casey, A., Tenuta, T., Lynch, I., Dawson, K.A., Byrne, H.J., Davoren, M. Preparation, characterization of NIPAM and NIPAM/BAM copolymer nanoparticles and their acute toxicity testing using an aquatic test battery. *Aquat Toxicol*. 2009, 92, 146-154.
13. Van Hoecke K, Quik JT, Mankiewicz-Boczek J, De Schamphelaere KA, Elsaesser A, Van der Meeren P, Barnes C, McKerr G, Howard CV, Van de Meent D, Rydzyński K, Dawson KA, Salvati A, Lesniak A, Lynch I, Silversmit G, De Samber B, Vincze L, Janssen CR. Fate and effects of CeO2 nanoparticles in aquatic ecotoxicity tests. *Environ Sci Technol.* 2009, 43:4537-4546.
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