

# Curriculum Vitae

**Last name, First name:** Dawson, Kenneth

**Gender:** Male

**Nationality:** Irish

## Overall Scientific Expertise:

Kenneth Dawson, Ph.D., is Director of the Centre for BioNano Interactions (CBNI), which is the Irish national platform for excellence in the interaction of nanoparticles with living systems. Prof Dawson is currently steering the development of this as a national core excellence facility in bionanoscience, and is the lead investigator of the Bionanoscience Activities in University College Dublin. He is Chair of Physical Chemistry, and a Director of the Complexity Centre in Rome. Prof. Dawson also has considerable experience in the management of EU projects, including multi-sectoral cross-disciplinary research projects, and currently co-ordinator of several cross EU and EU-US programs, including FP6 NanoInteract, and FP7 NeuroNano. His research interests include systems science, self-organized criticality, and advanced methods of computation and the Interface between soft matter / colloidal and nanoparticles systems and biology, and biomaterials, bionanomaterials.

## Professional Experience

[Starting with your present occupation, list in reverse chronological order each activity in which you have been engaged. Please copy and paste more rows if needed.]

Years employed from – to	Title of position	Employer – name and location	Areas of professional specialization <sup>^</sup>
1992-Present	Professor and Chair of Physical Chemistry	University College Dublin, Belfield, Dublin 4, Ireland	Bionanointeractions; NanoBiology; Nanosafety / nanotoxicology; Cell-nanoparticle interactions; Nanoparticle-protein interactions; Quantitative approaches.
1989-1992	Adjunct Professor of Biophysics	University of California, Berkeley	Biophysical Chemistry
1987-1990	Assistant Professor of Chemistry	University of California, Berkeley	Biophysical Chemistry
1985-1988	Strategic User	The Cornell National Supercomputer Centre	Complex and arrested matter
1986-1987	Postdoctoral Fellow	Cornell University, Ithaca, NY 14853	Microemulsions, complex matter, arrested solutions
1983-1984	Research Visitor	Institute Haute Etudes Scientific, Paris	Complex and arrested matter

<sup>^</sup>[For example: toxicology (alternative methods, carcinogenesis, endocrine, immunotoxicity, occupational, exposure assessment, genotoxicity, etc.), chemistry (atmospheric, medicinal, peptide, etc.), physics (biophysics, EMF radiation, noise, etc.), engineering (genetic, environmental, medical, etc.),

biology (antimicrobial resistance, biophysics, biotechnology, etc.), medicine (allergies, neurology, etc.), epidemiology (clinical, genetic, cancer, etc.) environmental science (air quality, waste treatment, climate change, ecology, etc.), biostatistics, pharmacokinetics, medical technologies, nanoscience, etc...]

## Educational Background

[Starting with the most recent, please provide the details of your post-secondary education and/or professional training (e.g. university or its equivalent, postgraduate, postdoctoral). Please copy and paste more rows if needed.]

Year	Degree awarded	Educational Institution – name and location	Areas of educational specialization*
1980	BSc	Queens University Belfast	Chemistry
1981	MSc	Queens University Belfast	Mathematics
1984	DPhil	University of Oxford, UK	Chemistry

\*[For example: chemistry (analytical, organic, etc.), physics (thermodynamics, nuclear, etc.), engineering (mechanical, electrical, chemical, civil, etc.), biology (microbiology, molecular, etc.), medicine (dermatology, oncology, etc.), environmental science, pharmacology, toxicology, etc....]

## Memberships in Scientific Advisory Bodies/Committees/Panels (if any):

- Founder Member of Council of Scientists of INTAS
- Chair International Alliance for NanoEHS Harmonisation
- Member of ITF Nanomedicines Expert Group
- OECD / ISO Nanotechnology standards working group member
- Executive Board of INFM-CNR research and development centre on Statistical Mechanics and Complexity, La Sapienza
- Board of Review (External), Department of Energy, Board of Review (External), National Institute of Health, Maryland, U.S.A.

## Memberships in Learned Societies (if any):

- Member of the Royal Irish Academy, National Committee for Chemistry
- Member of New York Academy of Sciences, USA
- Member and Former Chair of the European Colloid and Interface Society

## Memberships in Editorial Boards (if any):

- Editorial Board, Current Opinion in Colloid and Interface Science,
- Editor in Chief of Physica.

## List of Publications:

(Selected Publications)

- Dawson KA, Salvati A, Lynch I. Nanotoxicology: nanoparticles reconstruct lipids. Nat Nanotechnol. 2009 4, 84-85.
- Lundqvist, M., Stigler, J., Cedervall, T., Elia, G., Lynch I., Dawson K. Nanoparticle Size and Surface Properties determine the Protein Corona with possible implications for Biological Impacts. PNAS, 105, 14265-14270.
- Barnes, C.A., Elsaesser, A., Arkusz, J., Smok, A., Palus, J., Lesniak, A., Salvati, A., Hanrahan, J.P., de Jong, W.H., Dziubałowska, E., Stepnik, M., Rydzyński, K., McKerr, G., Lynch, I., Dawson, K.A., Howard, C.V. Reproducible Comet Assay of amorphous silica nanoparticles detects no genotoxicity. 2008 Nano Letters, 8, 3069-3074.
- Lynch, I., Dawson K.A. Protein-nanoparticle interactions, NanoToday, 2008, 3, 40-47.

- Cedervall T, Lynch I, Lindman S, Berggård T, Thulin E, Nilsson, H, Linse S, Dawson KA. Understanding the nanoparticle protein corona using methods to quantify exchange rates and affinities of proteins for nanoparticles, *PNAS*, 2007, 104, 2050-2055.
- Cedervall T, Lynch I, Foy M, Berggård T, Donnelly SC, Cagney G, Linse S, Dawson KA, Detailed Identification of Plasma Proteins Adsorbed on Copolymer Nanoparticles, *Angew. Chem. Int. Ed.* 2007, 46, 5754–5756.
- Linse S, Cabaleiro-Lago C, Xue W-F, Lynch I, Lindman S, Thulin E, Radford SE, Dawson KA, Nucleation of protein fibrillation by nanoparticles, *PNAS*, 2007, 104, 8691-8696.
- Allen LT, Tosetto M, Miller I, O'Connor D, Penney SC, Lynch I, Keenan AK, Pennington SR, Dawson KA, Gallagher WM, Surface induced changes in protein adsorption and implications for cell-surface response. *Biomaterials*, 2006, 27, 3096-3108.
- Allen, L.T., Fox, E.J, Blute, I., Kelly, Z.D., Rochev, Y., Keenan, A.K., Dawson, K.A., Gallagher, W.M., Interactions of soft condensed materials with living cells: phenotype/transcriptome correlations for the hydrophobic effect, *Proc Natl Acad Sci U.S.A.*, 2003, 100, 6331-6336.
- Dawson, K. A., The glass paradigm for colloidal glasses, gels and other arrested states driven by attractive interactions, *Current Opinion in Colloid and Interface Science*, 2002, 7, 218.
- De Gregorio, P., Lawlor, A., Bradley, P., Dawson, K. A., First exact solution of a jamming transition, *Proc Natl Acad Sci U.S.A.*, 2005, 102, 56669.