

# Plenary Speaker 1

Plenary Speech Title: will be appeared soon.



**Dr. Jeffrey Johnson** is  
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Publications

## Professional biography

I joined the Design Discipline at the OU in 1981 after three years in the Geography Department at Cambridge University working with Graham Chapman and Peter Gould. Before that I was in the Mathematics Department at Essex University working with Ron Atkin on his theory of Q-analysis for social systems. This has developed into what I now call multilevel [hypernetworks](#). This research involves the application of hypernetwork theory in the design and management of complex social and technical systems at local and global levels in the emerging policy-oriented field of [Global Systems Science](#). The FutureLearn short MOOC [Global Systems Science and Policy: An Introduction](#) starts on 14 March 2016,

My OU undergraduate teaching has included: creating the CADPAC suite of interactive computer exercises for *T363: Computer Aided Design*; creating the SmartLab suite of interactive computer exercises for *T395 - Mechatronics, Designing Intelligent Machine* and co-authoring with Phil Picton the textbook *Mechatronics: Concepts in Artificial Intelligence*; leading the development of *T183 - Design and the Web*, *T184 - Robotics and the meaning of life*, *A178 - Perspectives on Leonardo*, *TM190 - The Story of Maths*, *T218 - Design for Engineers*; and writing the interactive computer exercises for *T174 - Engineering the Future*. I am currently production chair of *T212 Electronics: Sensing, Logic and Actuation* (2017), member of the *T312 Electronics* module production team (2019), and member of the team producing the new *Open STEM Laboratory* giving students remote access to hand-on electronics and robotics experiments.

My OU PhD supervisions include: Richard Murphy - *Constraint-based design synthesis for computer aided design* (1993); Meng Hua - *A neural network based strategy for robot navigation in dynamic environments* (1994), Paul Margerison - *An algorithmic and interactive approach to computer art* (1995), George Glaze - *Graphic design evaluation: towards a rule-based system* (1995), David Durling - *Teaching with style: computer aided instruction, personality and design education* (1996), Claudia Eckert - *Intelligent support*

*for knitwear design* (1997), Linda Waddoups - *A binary representation for built form* (2001), Jack Cawkwell - *An automated guided vehicle for local transport* (2004), Sunny Bains - *Physical computation and embodied artificial intelligence* (2004), Nick Scott - *Measures from complexity science provide manufacturing companies with insights previously unavailable to them* (2004), John Welford - *Artificial Intelligent for classifying oral lesions* (2005), Pejman Iravani - *An architecture for multilevel learning and robotic control based on concept generation* (2005), Valery Rose - *Evolutionary adaptive self-learning machine vision* (2010), Joan Serras - *Multidimensional multilevel representation for traffic simulation models* (2008), James Law - *Abstracting multidimensional concepts for multilevel decisionmaking in multirobot systems* (2008), Vikas Chandra - *Patenting and publication networks in stem cell research* (2009), Paul Morley. *Investigation into automated laundry sorting* (2012), Anthony Johnston - *Sensory augmentation for navigation in difficult urban environments by people with visual impairment* (2013), Iain Kusel - *A computational model of the emergence of seriation in the young child* (2014), Tasos Varoudis - *Augmented visibility in architectural space influencing movement patterns* (2014), Bjorn Madsen - *How to Make the Most Productive Intervention in a Complex Economic System* (2015). Current supervision: Cristian Jimenez-Romero - *Hypernetworks and spiking neural networks in peer marking for scalable education*. Charlotte Foster: Video production in the social welfare charity sector – processes, narrative and ethics (supported by [AHRC Design Star](#)) My BA and PhD are in mathematics. I am a Fellow of the Institute of Mathematics and its Applications, a Fellow of the British Computer Society, a Chartered Mathematician and Chartered Engineer. I have been director of various engineering and consulting companies and am the CEO of [Vision Scientific Ltd](#), a company I founded with Phil Picton in 1989. I am a Past President of the [Complex Systems Society](#), and a Board Member and Deputy President of the [UNESCO UniTwin Digital Campus for Complex Systems](#). [David Sousa-Rodrigues](#) and I are the OU partners in the European [TOPDRIM](#) Project coordinated by [Emanuela Merelli](#).