
CNIO Workshop on Philosophy & Biomedical Sciences:

Debates on conceptual and social issues

CNIO Auditorium (Madrid), November 19, 2019

Organisers: **Maria A. Blasco** (CNIO), **Antonio Diéguez** (UMA), **Arantza Etxeberria** (UPV/EHU)

Rationale: The Workshop consists of three debates on topics, which are discussed both in science and in philosophy and have a conceptual and/or social impact in current research in the Life Sciences. The aim is to bring philosophical insights closer to the practice of science, as well as to motivate philosophical work scientifically.

9:00 – 9:15 Welcome

Session 1

09:15-10:30 *Aging, enhancement, and human nature at the age of transhumanism*

Chair: *tbd*

Aging and death have been important aspects of our self-understanding as humans, but transhumanist or posthumanist perspectives present now challenging alternatives around enhancement that need to be discussed both from a philosophical and scientific perspective.

Antonio Diéguez
Michael Hauskeller
Maria A. Blasco

10:15-10:30 Q&A

10:30-11:00 coffee break (hall)

Session 2

11:00-12:15 *Extended heredity, systems medicine, and personalised medicine*

Chair: *tbd*

This debate will question from the philosophical and biomedical perspective the impact of non-genetic factors on heredity and how contemporary biomedicine includes them in conceptual and practical senses. Related to this are also systems medicine and personalised medicine. There are different views on how “personalised medicine” needs to be carried by current biomedical sciences. Some are more technological, others are more humanistic...

Arantza Etxeberria
Henrik Vogt
Alfonso Valencia

12:00-12:15 Q&A

cnio stop cancer

Session 3

12:15-13:30 *The impact of CRISPR-Cas editing in biology and society*

Chair: tbd

This debate will discuss both scientific and philosophical issues related to CRISPR-Cas. Is it a return to Lamarckian views in Biology? What are its main ethical challenges?

Maria Cerezo
Lluís Montoliu
Iñigo de Miguel

13:15-13:30 Q&A

13:30 Farewell and Cocktail Party (Cafeteria)

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MARIA A. BLASCO

Maria A. Blasco obtained her PhD in 1993 at the *Centro de Biología Molecular "Severo Ochoa"* under the supervision of M. Salas. That same year, Blasco joined the *Cold Spring Harbor Laboratory* in New York (USA) as a Postdoctoral Fellow under the leadership of C. W. Greider. As a postdoc she isolated one of the telomerase essential genes and generated the first telomerase deficient mouse model, which served to demonstrate the importance of telomerase in telomere maintenance, chromosomal instability and disease. In 1997, she returned to Spain to start her own research Group at the *Centro Nacional de Biotecnología* in Madrid. She joined the *Spanish National Cancer Research Center (CNIO)* in 2003 as Director of the Molecular Oncology Programme and Leader of the Telomeres and Telomerase Group. In 2005, she was also appointed Vice-Director of Basic Research at CNIO. Since June 2011, she is the CNIO Director.

For more than 20 years, Blasco's work has focused in demonstrating the importance of telomeres and telomerase in cancer, as well as in age-related diseases. Blasco has published more than 250 papers in international journals and has an h-index of 81. Her achievements have been recognized by the following international and national awards: Josef Steiner Cancer Research Award, Swiss Bridge Award for Research in Cancer, Körber European Science Award, the EMBO Gold Medal, the "Rey Jaime I" Award in Basic Research, the Fundación Lilly Preclinical Research Award, and the "Santiago Ramón y Cajal" National Award in Biology. Blasco holds two Doctorate Honoris Causa from the *Universidad Carlos III* of Madrid and from *Universidad de Alicante*.

MARÍA CEREZO

University of Murcia, Philosophy, Faculty Member. I am philosopher of language and philosopher of science at the University of Murcia, Spain. My research has been focussed on Wittgenstein's Tractatus, medieval semantics, vagueness and some issues in philosophy of biology. PhD, University of Navarra, Spain, 1996

Postdoc, Stanford University 1997-2000

Assistant and Associate Professor, University of Navarra, 2000-2007

Associate Professor, University of Murcia, 2007-2017

Professor, University of Murcia, 2017-to present

IÑIGO DE MIGUEL

Education. Licensed in Economics and Business Management and Administration by the University of Navarra (1995) and in Law by the UNED (1997). European Doctor in Law by the UNED (2003).

To broaden his education and his research, he undertook a nine-month research stay at the University of Pisa (Italy, 2002-2003).

Research Activity. His research has been aimed towards areas related with the Philosophy of Law, Ethics in the Economy, Legal Sociology, Bioethics, Biolaw, Genetics and Biotechnology, etc.

He has participated in several research projects, among which the following can be highlighted: CHIMBRIDS. Chimeras and Hybrids in Comparative European and International Research. Scientific, ethical, philosophical and legal aspects; BIOTETHED. Biotechnology Ethics: deepening by research, broadening to future applications and new EU members, permeating education to young scientist; LATINBANKS. Study on the legal and social implications on the creation of banks with human biological material in Latin America.

Teaching and Research Activity. Teaching Scholar at the UNED, Researcher at the University of Pisa, Researcher at the Inter-University Chair in Law and the Human Genome, Invited Professor in the Doctorate courses at the University of Calabria and the UNED. Additionally, he has participated as a lecturer in many courses, seminars and congresses.

Currently he is a professor teaching the following courses: University Expert in Biolaw, Specialist in Human Rights, University Expert in Immigration and in the Master of Ethics Committees of the UNED.

Publications. He has published many articles as well as books such as "El embrión humano ante la biotecnología" and "Matrix. La humanidad ante la encrucijada", "La Clonación, diez años después", "El poder en la era de la globalización" and "Bioética y nuevas biotecnologías en salud humana".

Awards and Distinctions. He has been bestowed the following: EXECNA Award for Foreign Commerce, Award Francisco Ynduráin de las Letras, the Víctor Grifols i Lucas Foundation 2006-2007 Award for Research in Bioethics and the 2008 Award Junta General del Principado de Asturias-Sociedad Internacional de Bioética (SIBI).

ANTONIO DIÉGUEZ

Educational background: 1987: Doctor in Philosophy (award with special distinction), University of Málaga (Spain). 1984: Bachelor Degree in Philosophy and Teacher Training (award with special distinction), University of Málaga (Spain).

Other studies: 1998-2002: Completed several Biology courses in the Faculty of Sciences, University of Málaga (Cytology, Zoology, Mathematics, Chemistry, New Trends in Biology, Bio-molecules, Microscopic Plant Organography, Animal Systematics and Phylogeny, Botanic, Physics, Microbiology, Biostatistics, Biochemistry, Genetics, Ecology, Theory of Evolution, Genetic Analysis, Neurophysiology, Ecological Theory, Paleobiology, Evolutionary Paleontology).

Academic positions:

- May 2010 – present: Full Professor of Logic and Philosophy of Science (Catedrático de Lógica y Filosofía de la Ciencia), Department of Philosophy, University of Málaga (Spain)
- June 1989 – May 2010: Associate Professor of Logic and Philosophy of Science (Profesor Titular de Lógica y Filosofía de la Ciencia), Department of Philosophy, University of Málaga (Spain).
- October 1987 – May 1989: Temporary Associate Professor (Profesor Titular Interino), Department of Philosophy, University of Málaga.
- January 1986 – September 1987: Profesor Colaborador, Department of Philosophy, University of Málaga.
- November 1984 – December 1985: Teaching Assistant (Profesor Ayudante), Department of Philosophy, University of Málaga.

Present teaching:

Philosophy of Science / Philosophy of Biology

Publications:

Books:

- (2017) Transhumanismo. La búsqueda tecnológica del mejoramiento humano (Transhumanism. The Technological Search for Human Enhancement), Barcelona: Herder.
- (2012) La vida bajo escrutinio. Una introducción a la filosofía de la biología (Life Under Scrutiny. An Introduction to Philosophy of Biology), Barcelona: Biblioteca Buridán.
- (2011) La evolución del conocimiento. De la mente animal a la mente humana (The Evolution of Knowledge. From Animal Mind to Human Mind), Madrid: Biblioteca Nueva.
- (2005) Filosofía de la ciencia (Philosophy of Science), Madrid: Biblioteca Nueva.
- (1998) Realismo científico. Una introducción al debate actual en la filosofía de la ciencia (Scientific Realism. An Introduction to the current Debate in the Philosophy of Science), Málaga: Universidad de Málaga.
- (1988) La teoría de las ciencias morales en John Stuart Mill (John Stuart Mill's Theory of Moral Sciences), Málaga: Universidad de Málaga.

ARANTZA ETXEBERRIA

Arantza Etxeberria Agiriano is Associate Professor at the University of the Basque Country UPV/EHU since 1998. AE graduated in Philosophy at the Complutense University of Madrid (1985), obtained a PhD in Philosophy at the University of the Basque Country UPV/EHU (1992), and was a postdoctoral researcher at the University of Sussex (1992-1994). Since then she has been a visiting scholar at the University of Iceland (2000 and 2002) and the University of Exeter (2007) and Bristol University (2013).

Research interests: Philosophy of Biology / Philosophy of Science / Philosophy of Medicine / Science and Society / Bioethics

Selected Publications

Forthcoming

Etxeberria, A. "Evolucionabilidad", in J. Galindo y M. Martínez (coords.), Conceptos de la biología evolutiva para las ciencias sociales y las humanidades. En prensa.

2019

Etxeberria Agiriano, A. (2019). El sentido de la muerte: vida, biología e inmortalidad. Catálogo de la exposición Heriotza. Ante la muerte, comisariada por San Telmo Museoa y José Ángel Achón.

2018

Etxeberria, Arantza (2018) Por qué hay menos mujeres en Filosofía: un punto ciego y sus explicaciones, Dilemata 27: 333-345.

Etxeberria, Arantza & Wolfe, Charles T. (2018). Canguilhem and the Logic of Life. Transversal. International Journal for the Historiography of Science, 4: 47-63.

Etxeberria, A. y Nuño de la Rosa, L (2018) Pere Alberch (1954-1998), in Laura Nuño de la Rosa & Gerd Müller Eds. Evolutionary Developmental Biology – A Reference Guide. Springer.

2017-2012 (http://www.ias-research.net/people/arantza_etxeberria/)

MICHAEL HAUSKELLER

University of Liverpool, Department of Philosophy. After spending 15 years at the University of Exeter, I came to Liverpool in January 2018 to lead the Department of Philosophy into a bright new future. Looking at all the wonderful, smart and accomplished people who already work here, my task should be easy enough. As a philosopher, I am a generalist, which is a nice way of saying that I have done many different things and I am not really an expert on anything in particular. Most people would probably tag me as an ethicist, but this is only true in a very broad sense. Figuring out what is right and what is wrong, permissible or impermissible does not hold much interest for me. It seems to me that when people are debating these questions they are actually arguing about something else, namely who we want to be and in what kind of world we want to live. For me, doing philosophy is ultimately a sustained attempt to get to grips with this "deeply puzzling world" (to borrow an expression of Mary Midgley's), to understand it and to understand our place in it. Philosophy is not business; it's personal, more akin to therapy than to science. It's about finding out 'what the hell is going on' and 'what the hell we are doing here'. Can philosophy provide an answer to these questions? I don't know. All we can do is keep on trying. Perhaps what matters is not that we find an answer, but that we keep the question alive.

LLUIS MONTOLIU

Graduated in Biological Sciences (1986) and obtained his PhD in Molecular Genetics (1990) at the University of Barcelona. Currently, he is a Research Scientist of the Spanish National Research Council (CSIC) and established his laboratory at the National Centre for Biotechnology (CNB), in Madrid (Spain) since 1997, after two postdoctoral periods in Heidelberg (German Cancer Research Center, 1991-1995) and Barcelona (Autonomous University of Barcelona, 1995-96). Since 2007 he was also appointed researcher at the Spanish Research Initiative on Rare Diseases (CIBERER-ISCIII) where he is now serving at its Steering Committee. He has been Honorary Professor at the Autonomous University of Madrid for 20 years (1998-2018), and, since 2007, is the Director of the Spanish node of the European Mouse Mutant Archive (EMMA/INFRAFRONTIER) Spanish node.

Including his PhD, from 1986, where he worked in plant molecular genetics, in maize, he has been always working on the genetic modification of organisms (GMOs). Since 1991 he has been working in several scientific projects within the field of animal transgenesis. At the CNB he leads a research team interested in basic science, to understand the mechanisms controlling gene expression and organization in mammalian genomes, and in applied science, generating animal models for the study of human rare diseases, such as albinism. He has contributed significantly to animal transgenesis methods developing artificial chromosome transgenesis. He has also pioneered the use and dissemination of gene-editing CRISPR approaches in Spain for the functional analysis, in vivo, of regulatory elements found in the non-coding genome. Currently, he is involved in collaborative efforts towards the universal genetic diagnosis of all known forms of albinism and collaborates with patient's associations, such as ALBA, the Spanish association in support of people with albinism. He has published more than 100 articles and co-invented several patents in the field.

He is the current President of the European Society for Pigment Cell Research (ESPCR) and serves at the boards of additional societies (IFPCS, IMGS, ACB, SEG). In 2006, he founded the International Society for Transgenic Technologies (ISTT) for which he has served as President since inception to 2014. He is a member of the CSIC Ethics Committee and the Ethics Panel of ERC in Brussels. In addition to research, he is also interested in bioethics, education and popular science. In 2018 he has received the ISTT Prize, for his outstanding contributions to animal transgenesis, the Honor Plaque from the Association of Spanish Scientists (ACE) for his contributions to Spanish Science and the SINCRonizados Award by the Agencia SINC for his commitment with popular science and collaboration with journalists and media

ALFONSO VALENCIA

Prof. Alfonso Valencia's group is dedicated to the application of machine learning and artificial intelligence to Personalized Medicine, and exhibits ample experience in the development of software platforms for the extraction, integration and representation of big data for large-scale genome projects. The group participates in different international consortia such as the ENCODE project, the ICGC cancer genome effort (including the Spanish subproject on CLL), the BLUEPRINT project and Rare Diseases (RD)-Connect part of the International Rare Diseases Research Consortium (IRDiRC)

Furthermore, Alfonso Valencia is the director of the Spanish National Bioinformatics Institute (INB-ISCI). The INB represents the Spanish node of the European Bioinformatics infrastructure ELIXIR, and is committed to generating and supplying bioinformatics solutions in the context of national and international activities and consortia.

Main Research Lines

- Software development for protein-protein interactions
- Docking for interactomics and personalized medicine
- Personalized Medicine Initiative
- New approaches to the prediction of protein structure and interactions
- Network Biology

HENRIK VOGT