



FIFTH WORLD CONFERENCE ON  
**THE FUTURE OF SCIENCE™**



*The DNA Revolution*

VENICE, SEPTEMBER 20-22, 2009

**Fifth World Conference on The Future of Science**  
***The DNA Revolution***  
**Fondazione Cini, Venice, September 20-22, 2009**

*in collaboration with Italian Association for Cancer Research*

The discovery of the structure of DNA, more than fifty years ago, and the realization that it encoded the genetic information that determines the nature of all living organisms, created a true revolution in our understanding of biology and medicine, whose impact on essentially every aspect of life continues and expands to this day.

While genome sequencing of multiple organisms, from humans to bacteria, has revealed exciting new information about our genetic make-up and the mechanisms of disease – leading to what has been called the post-genomic era – the function and purpose of much DNA remains to be discovered.

The Conference will assess the impact that the “DNA Revolution” has had and will continue to have on science, technology and the quality of human life. It will focus on the significance of the most recent genetic research to our understanding of evolution and natural selection, health and disease; on how the knowledge provided by DNA research has dramatically changed the practice of medicine, agriculture and the management of biological resources; and on the bioethical issues raised by such discoveries. Major topics to be discussed will be genes and genome evolution, the impact of recombinant DNA on biotechnology and pharmaceuticals, the genetics of human diseases, gene therapy, and the molecular genetics of cancer.

**PRESIDENT** Umberto Veronesi – **VICE PRESIDENT** Kathleen Kennedy Townsend – **SECRETARY GENERAL** Chiara Tonelli

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## ***The Dna Revolution***

**Fondazione Cini, Venice, September 20-22, 2009**

**CONFERENCE PROGRAM, September 7, 2009**

**Sunday, September 20 – Fondazione Cini**

**5.00 p.m. Opening Ceremony**

### ***Welcome Addresses***

<b>Umberto Veronesi</b>	Conference President
<b>Giovanni Bazoli</b>	President Giorgio Cini Foundation
<b>Marco Tronchetti Provera</b>	President Silvio Tronchetti Provera Foundation
<b>Kathleen Kennedy Townsend</b>	Conference Vice President
<b>Chiara Tonelli</b>	Conference Secretary General
<b>James Watson</b>	1962 Nobel Prize in Medicine ( <i>message</i> )
<b>Renato Dulbecco</b>	1975 Nobel Prize in Medicine ( <i>message</i> )

### ***Opening Lectures***

<b>Human evolution between nature and culture</b>	<b>Luigi Luca Cavalli-Sforza</b>	Stanford University, USA
<b>Molecular Medicine: a possible Future?</b>	<b>Pier Paolo Di Fiore</b>	IFOM Foundation, The Firc Institute of Molecular Oncology; University of Milan, Italy
<b>Synthetic Life</b>	<b>J. Craig Venter</b>	J. Craig Venter Institute, USA

**7.30 p.m. Welcome Cocktail**

**Monday, September 21 – Fondazione Cini****9.00 a.m. – 1.00 p.m.:*****Genomes, Evolution, Biotechnology***

**Chairs:** **Paolo Costantino**, Department of Genetics and Molecular Biology, University of Roma La Sapienza, Italy *and* **Telmo Pievani**, Department of Human Sciences for Education, University of Milan Bicocca, Italy

<b>Genes and Genomes through time</b>	<b>Edoardo Boncinelli</b>	University Vita-Salute, Milan, Italy
<b>Racial catalogs and human biological diversity</b>	<b>Guido Barbujani</b>	Department of Biology and Evolution, University of Ferrara, Italy
<b>Genomes from the Sea</b>	<b>Chris Bowler</b>	Ecole Normale Supérieure, Paris, France

**10.30 a.m. – 11.00 a.m. Coffee break**

<b>The diversity of the microbial world: a challenge for the future</b>	<b>Enrica Galli</b>	Department of Biomolecular Sciences and Biotechnology, University of Milan, Italy
<b>Crop Plant Genomics for Food Security</b>	<b>Michael Bevan</b>	John Innes Centre, Norwich, UK
<b>Nutritionally improved crops to alleviate malnutrition and chronic diseases</b>	<b>Chiara Tonelli</b>	Department of Biomolecular Sciences and Biotechnology, University of Milan, Italy
<b>Genomics Research in European Programmes</b>	<b>Timothy Hall</b>	Biotechnologies, Agriculture and Food Research Directorate, European Commission

**1.00 a.m. – 2.30 p.m. Lunch****2.30 p.m. – 6.00 p.m.:*****Stem Cells. DNA and Ethics***

**Chairs:** **Giulio Giorlo**, Department of Philosophy, University of Milan, Italy *and* **Giuseppe Testa**, Laboratory of Stem Cell Epigenetics, European Institute of Oncology, Milan, Italy

<b>Stem cells: replacement therapy</b>	<b>Giulio Cossu</b>	San Raffaele Scientific Institute; Department of Biology, University of Milan, Italy
<b>Unleashing the Genome: Maintaining, Reinstating and Exploiting Pluripotency</b>	<b>Oliver Brüstle</b>	University of Bonn, Germany

**3.30 p.m. – 4.00 p.m. Coffee break**

<b>Bioethics and the Future of Science</b>	<b>John Harris</b>	Institute for Science, Ethics and Innovation, School of Law, University of Manchester, UK
<b>Should privacy be abolished in genetics?</b>	<b>Amedeo Santosuosso</b>	Judge Court of Appeal of Milano; University of Pavia, Italy
<b>Truth, Good and Justice in Scientific Activities</b>	<b>Marcelo Sanchez Sorondo</b>	Pontifical Academy of Sciences, Vatican
<b>Bioethics in public perception and media coverage</b>	<b>Massimiano Bucchi</b>	Department of Sociology of Science, University of Trento, Italy
<b>8.00 p.m. Concert at Scuola Grande di San Rocco</b>		

<b>Tuesday, September 22– Fondazione Cini</b>		
<b>9.00 a.m. – 12.30 a.m.: <i>DNA, Human Health and Disease</i></b>		
<b>Chairs: Claudio Basilico</b> , Department of Microbiology, NYU School of Medicine, New York, USA <i>and</i> <b>Guido Coggi</b> , Department of Pathology, University of Milan, Italy ( <i>unable</i> )		
<b>The Future of DNA Technology: transforming the material world</b>	<b>William Haseltine</b>	Haseltine Foundation for Medical Sciences and the Arts, USA
<b>New insights into the mechanisms of human disease</b>	<b>Veronica van Heyningen</b>	Human Genetics Unit, Institute of Genetics and Molecular Medicine, Edinburgh, UK
<b>Learning Biology from the study of Genetic Diseases</b>	<b>Andrea Ballabio</b>	Telethon Institute of Genetics and Medicine; University of Naples, Italy
<b>10.30 a.m. – 11.00 a.m. Coffee break</b>		
<b>Gene Therapy for congenital and acquired disorders: promoting the progress of clinical applications</b>	<b>Claudio Bordignon</b>	University Vita Salute San Raffaele, Milan, Italy
<b>Next Generation Microbial Genomics: The Human Microbiome Project</b>	<b>George Weinstock</b>	The Genome Center, Washington University, St. Louis, USA
<b>Longevity Genomics</b>	<b>Pier Giuseppe Pelicci</b>	Experimental Oncology Department, European Institute of Oncology; University of Milan, Italy

<b>12.30 a.m. – 2.00 p.m. Lunch</b>		
<b>2.00 p.m. – 5.00 p.m.:</b> <i>Italian Association for Cancer Research Symposium</i>		
<i>Cancer Genetics</i>		
<b>Chairs:</b> Maria Ines Colnaghi, Italian Association for Cancer Research and Pier Paolo Di Fiore, IFOM Foundation, The Firc Institute of Molecular Oncology; University of Milan, Italy		
<b>Biomolecular mechanisms of cancer: the clinical perspective</b>	<b>Umberto Veronesi</b>	European Institute of Oncology, Milan, Italy
<b>Common genetic variants, risk, and applications in cancer</b>	<b>Bruce Ponder</b>	Cancer Research UK, Cambridge Research Institute, Li Ka Shing Centre, UK
<b>Linkages Between Genome Disorder and Breast Cancer Development</b>	<b>David Livingston</b>	Dana-Farber Cancer Institute, Harvard Medical School, Boston, USA
<b>3.30 p.m. – 4.00 p.m. Coffee break</b>		
<b>Cancer Stem Cells: Getting to the Root of Cancer</b>	<b>Dominique Bonnet</b>	Cancer Research UK, London Research Institute, UK
<b>The Era of Genome-based Targeted Therapy of Cancer</b>	<b>Yosef Yarden</b>	Department of Biological Regulation, The Weizmann Institute of Science, Rehovot, Israel