



Curriculum Vitae Professor Dr Alta Charo

Name: R. Alta Charo

Date of birth: 6 June 1958

Research Priorities: Biotechnology, Genetics, ethical, political, and legal aspects of new biotechnological Methods

Alta Charo is an American biologist and legal scholar who is considered one of the leading experts in the field of bioethics. She focuses on the ethical, political, and legal questions which arise in response to the application of emerging biotechnologies. Both in the United States and internationally, she takes part in scientific committees dedicated to developing recommendations pertaining to this broad and complex field. Furthermore, she advises private companies as well as government institutions. Applications in the realm of human medicine constitute one of her main focus areas.

Academic and Professional Career

- since 2021 Emerita, Warren P. Knowles Professor, Law School, University of Wisconsin, Madison, USA
- 2006 Visiting Professor, UC Berkeley School of Law, University of California, Berkeley, USA
- 2005 - 2020 Warren P. Knowles Professor, Law School, University of Wisconsin, Madison, USA
- 2003 - 2005 Elisabeth S. Wilson Professor, Law School, University of Wisconsin, Madison, USA
- 2002 - 2006 Associate Dean for Research and Faculty Development, Law School, University of Wisconsin, Madison, USA
- 1998 - 2003 Professor, Law School, University of Wisconsin, Madison, USA
- 1998 - 2017 Professor, Department of Medical History and Bioethics, School of Medicine and Public Health, University of Wisconsin, Madison, USA
- 1995 - 1998 Associate Professor, Law School and Department of Medical History and Bioethics, School of Medicine and Public Health, University of Wisconsin, Madison, USA

- 1989 - 1995 Assistant Professor, Law School and Department of Medical History and Bioethics, School of Medicine and Public Health, University of Wisconsin, Madison, USA
- 1988 - 1989 Policy Analyst, Population Policy Division, US Agency for International Development, USA
- 1986 - 1988 Legal Analyst, Biological Applications Program, US Congress' Office of Technology Assessment, Washington D.C., USA
- 1985 - 1986 Fulbright Lecturer in Law, University of Paris 1 Panthéon-Sorbonne, Paris, France
- 1983 - 1985 Lecturer, Columbia Law School, Columbia University, New York City, USA
- 1982 - 1985 Associate Director, Legislative Drafting Research Fund, Columbia University, New York City, USA

Functions in Scientific Societies and Committees

- since 2021 Member, Board of Directors, The Allen Institute, Seattle, USA
- since 2020 Member, Scientific Advisory Committee, Innovative Genomics Institute, Berkeley, USA
- since 2016 Member, Intelligence Science and Technology Experts Group, National Academies of Sciences, Engineering, and Medicine, USA
Member, Biosciences Expert Advisory Committee, Lawrence Berkeley National Laboratory, Berkeley, USA
- 2015 - 2017 Co-Chairperson, Committee on Human Genome Editing, National Academies of Sciences, Engineering, and Medicine, USA
- 2014 - 2020 Member, Council, National Academy of Medicine, USA
- 2012 - 2015 Member, Advisory Board, National Center for Advancing Translational Sciences, National Institutes of Health, USA
- 2011 - 2012 Interim Associate Dean for Academic Affairs, Law School, University of Wisconsin, Madison, USA
- 2009 - 2011 Senior Policy Advisor, Office of the Commissioner, US Food & Drug Administration, USA
- 2008 - 2009 Member, U.S. Department of Health and Human Services (HHS) Review Team, Obama-Biden Transition Team, USA
- 2006 - 2010 Co-Chairperson, Committee on Embryonic Stem Cell Research, National Academies of Sciences, Engineering, and Medicine, USA

Honours and Awarded Memberships

since 2022	Member, German National Academy of Sciences Leopoldina, Germany
2021	Inaugural David A. Hamburg Distinguished Fellow, Nuclear Threat Initiative, Washington D.C., USA
since 2020	Member, American Association for the Advancement of Science, USA
since 2020	Member, American Academy of Arts & Sciences, USA
2019 - 2020	Berggruen Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford University, Stanford, USA
2013	Adam Yarmolinsky Medal, National Academy of Medicine, USA
since 2013	Member, National Academy of Medicine, USA
1998	H.I. Romnes Award, Wisconsin Alumni Research Foundation, University of Wisconsin, Madison, USA
1988 - 1989	AAAS Diplomacy Fellow, American Association for the Advancement of Science (AAAS), USA

Research Priorities

Alta Charo is an American biologist and legal scholar who is considered one of the leading experts in the field of bioethics. She focuses on the ethical, political, and legal questions which arise in response to the application of emerging biotechnologies. Both in the United States and internationally, she takes part in scientific committees dedicated to developing recommendations pertaining to this broad and complex field. Furthermore, she advises private companies as well as government institutions. Applications in the realm of human medicine constitute one of her main focus areas.

When it comes to treating or preventing diseases, new technologies which have emerged in the last few years have raised expectations. For example, the field of medicine places much hope in stem cells, which have the ability to develop into different cell types and tissues. After all, not only can they help to regenerate old or diseased tissue or even whole organs, they also offer new possibilities for determining the root causes of diseases, developing new antidotes, and tailoring therapy to the needs of affected individuals.

However, right from the start, stem cell research has drawn controversy. One central question, for example, concerns whether and under what circumstances it should be allowed to use embryos to harvest stem cells or even generate them at all. Alta Charo has used her position on American and international committees to address the political, legal, and ethical considerations regarding stem cell research. For example, she was involved in the development of the regulations for stem cell research and therapy which the International Society for Stem Cell Research released in 2022.

Another controversial topic which Charo examines in her work is genetic modification of life forms, including human beings. In this regard, the field of biology has made enormous progress in the last few years. New technologies such as genome editing using CRISPR/Cas allow scientists to manipulate genetic material more effectively, more precisely, more simply and more cost-effectively than ever before. Genetic information can be targeted and edited by modifying, adding or muting DNA portions. But questions arise as to the limits of ethical gene manipulation – for example when it comes to “designing” humans with a desired set of characteristics. Another ethical dilemma relates to the targeted modification of egg cells, sperm or embryos such that future generations, too, will be affected. Among other positions, Alta Charo has served on an expert panel of the World Health Organisation (WHO) that developed recommendations for global standards in this field.

However, genome editing also presents a wide range of possible applications for other organisms. For example, gene scissors could help to create salt- or heat-resilient crops. Or they might help endangered species to better cope with climate change and other challenges of global environmental change. There are even research teams already working on resurrecting extinct species. Alta Charo advises companies such as the American corporation Colossal Biosciences. Their goal is to manipulate the genetic material of an Asian elephant to exchange it little by little for the corresponding sequences of woolly mammoth genetic material. This way, step by step, an animal might be created similar to the extinct giants of the Ice Age.

All of these ideas would have seemed like unrealistic fantasy just a few decades ago. But progress in biotechnology has put them almost within our grasp and Alta Charo will continue to assess the chances, limits, and risks of these developments.