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Foreward

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ILR Special Issue

FOREWORD

This special issue of the Loyola of Los Angeles International and Comparative Law Review brings together five essays on the national and international legal aspects of the modification of the genome of human germline cells (i.e. sperm and oocytes). They were written for a symposium scheduled for spring 2020, to be held at Loyola Law School, Los Angeles, to launch the book *Human Germline Genome Modification and the Right to Science: A Comparative Study of National Laws and Policies* (Boggio, Romano, & Almqvist eds., Cambridge University Press, 2019). As the COVID-19 pandemic started claiming victims by the thousands across the globe, the symposium was hastily called off, but publication of the symposium essays went ahead. The pandemic and the disconnected initial international response provided yet another stark reminder of the importance of international cooperation in the field of medicine and biotechnology.

Over the past twenty-five years, biotechnology has enormously expanded the capacity to manipulate the building blocks of all life, including humans. As early as 2000, Gregory Stock and John Campbell noted that the achievement of the capacity to make changes to human germline cells was "inevitable."[1] "The real question," they postulated, was not "whether the technology will become feasible, but when and how it will."[2] The advent of the CRISPR/Cas9 family of genome editing tools during the second half of the 2010s answered the question of how. As to when, it was November 2018, when He Jianku, an associate professor in the Department of Biology of the Southern University of Science and Technology in Shenzhen, China, stunned the world by announcing that he had used CRISPR/Cas9 to edit the genome of at least two human embryos. The world quickly condemned the rogue scientist, who was also sanctioned by the Chinese government, but what was done could not be undone and a new world had been ushered in, ready or not.

1. ENGINEERING THE HUMAN GERMLINE: AN EXPLORATION OF THE SCIENCE AND ETHICS OF ALTERING THE GENES WE PASS TO OUR CHILDREN 6 (Gregory Stock & John Campbell eds., 2000).

2. *Id.* at 5.

For legal and ethical reasons explained in depth in the book, germline gene therapies have not yet been legally clinically tested on humans, anywhere. However, basic research has made progress towards unlocking CRISPR-based germline gene therapies to eliminate a long list of severe genetic disorders that claim or compromise the life of millions around the world. Whether these therapies will be able to move "from bench to bed," to be clinically applied, depends on the regulatory frameworks that each State, and all of them collectively, has in place, and those they will create in response to scientific, technological and legal challenges created by the application of CRISPR/Cas9 tools to the genome of human germline cells.

The book analyzes how human germline genome modification is currently regulated in a selected, but fairly broad and representative, set of eighteen developed countries, and assesses these national governance practices in the light of the existing and emerging international legal obligations states have, including, of course, the obligation to respect international human rights. The five pieces in this symposium issue revisit some of the chapters in the book and add further material for discussion.

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