



Online Ethics Center
FOR ENGINEERING AND SCIENCE

A Policy Framework For Anticipatory Neuroethics and Diverse Engagement Concerning CRISPR and Cognitive

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Description

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Body

Using CRISPR to edit genes that underlie human cognitive attributes represents a unique ethical challenge at the interface between the scientific community and the lay public. CRISPR is urgently needed to develop impactful therapeutic interventions for disease. Although this is the case, the disease treatment category has an outsized impact. For example, using CRISPR to alter the expression of genes that affect cognition to treat cognitive conditions like depression or schizophrenia carries a phenomenological burden that editing genes to treat cancer, for example, may not. This is because these genes occupy a special class, namely those that can change the nature of the lived experience by changing the definition of personhood for all stakeholders. As CRISPR technology is adopted to treat human cognitive diseases (cogCRISPR) it has the potential to redefine the nature of personhood because of the intimate relationship between human cognitive states and the delineation of the self.

Due to the potential importance of cogCRISPR in the lived experience of future stakeholders, an anticipatory ethical and policy framework is needed to drive discussion and debate with the most diverse set of stakeholders possible. This framework must engage diverse stakeholders representing the lay public, scientists, and private and government institutions concerning using

CRISPR therapeutics to alter cognitive and other mental traits. The system proposed here is called the CRISPR-cognition genes database (CCGD). This anticipatory ethical framework is built on a peer-to-peer review system. The CCGD is a dynamically updated system of genes pulled from studies in the scientific literature and validated by a scientific and non-scientific review board.

The database additions and subtractions are subject to public peer review and discussion gathered from diverse stakeholders to provide feedback into the review process. The CCGD would engage the public with private and government institutions in a process to provide oversight on what genes are altered using CRISPR concerning cognitive states. It would also provide a starting point for diverse stakeholder engagement in using this disruptive technology to treat neurological conditions and build trust as CRISPR is increasingly integrated into therapeutics across the biomedical space.

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