



**Congress of the United States**  
**House of Representatives**

May 24, 2021

Dr. Francis S. Collins  
Director, National Institutes of Health  
9000 Rockville Pike  
Bethesda, Maryland 20892

Dear Dr. Collins:

We are writing to express concerns about human-animal chimera research and to request that the National Institutes of Health (NIH) disclose any analysis of the serious ethical issues raised by this research as well as any plans the NIH may have to modify its current ban.

As you are no doubt aware, a team of researchers from the U.S., Spain and China has reportedly created the first monkey-human chimeras.<sup>1,2</sup> In the experiments conducted in China, human stem cells were injected into early monkey embryos, and the chimeric embryos survived for up to 19 days. Previous experiments by some of the same researchers created other hybrid fetuses, including pig-human and cow-human chimeric embryos, by injecting human stem cells into early animal embryos, as well as creating chimeric rat-mouse embryos.<sup>3</sup>

In 2015, the NIH wisely paused funding for human-animal chimera research while it deliberated about “the ethical issues that should be considered, and the relevant animal welfare concerns associated with these types of studies.”<sup>4</sup> In 2016, the NIH solicited comments on proposed changes that would end the pause and relax prohibitions on research and federal funding of human-animal chimera research.<sup>5</sup> The NIH received over 21,000 comments regarding human-animal chimera research.<sup>6</sup>

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<sup>1</sup> Tan T *et al.*, Chimeric contribution of human extended pluripotent stem cells to monkey embryos ex vivo, *Cell* 184, 2020-2032, April 15, 2021; doi: <https://doi.org/10.1016/j.cell.2021.03.020>

<sup>2</sup> Robert Lee Hotz, Creation of First Human-Monkey Embryos Sparks Concern, *Wall Street Journal* April 26, 2021, <https://www.wsj.com/articles/creation-of-first-human-monkey-embryos-sparks-concern-11619442382>

<sup>3</sup> Sara Reardon, Hybrid zoo: Introducing pig-human embryos and a rat-mouse, *Nature* 26 January 2017, <https://www.nature.com/news/hybrid-zoo-introducing-pig-human-embryos-and-a-rat-mouse-1.21378>

<sup>4</sup> NIH Research Involving Introduction of Human Pluripotent Cells into Non-Human Vertebrate Animal Pre-Gastrulation Embryos, Notice Number: NOT-OD-15-158, September 23, 2015, <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-158.html>

<sup>5</sup> Request for Public Comment on the Proposed Changes to the NIH Guidelines for Human Stem Cell Research and the Proposed Scope of an NIH Steering Committee’s Consideration of Certain Human-Animal Chimera Research, Notice Number: NOT-OD-16-128, August 4, 2016, <https://grants.nih.gov/grants/guide/notice-files/not-od-16-128.html>

<sup>6</sup> Public Comments on “Proposed Changes to the NIH Guidelines for Human Stem Cell Research and the Proposed Scope of an NIH Steering Committee’s Consideration of Certain Human-Animal Chimera Research”, accessed at: [https://grants.nih.gov/grants/rfi/responses\\_57.cfm](https://grants.nih.gov/grants/rfi/responses_57.cfm)

The moratorium on funding human-animal chimera research has remained in place, but recent news reports indicate that the NIH is awaiting the May release of the International Society for Stem Cell Research's new stem cell research guidelines to help inform its decision-making on this matter.<sup>7</sup>

The creation of monkey-human hybrids increases ethical concerns about blurring species lines and endowing animals with human characteristics. There are also pragmatic concerns regarding regulatory oversight and potential applicable statutory provisions that could apply to human-animal chimeras depending on the extent of human versus animal characteristics. For example, some types of human-animal chimeras might be prohibited under the Dickey-Wicker Amendment whereas other types could proceed. None of these issues have received thorough public discussion.

In light of these considerations, we seek clarification regarding the NIH's intent as well as deliberations, as follows:

1. Does the NIH still propose to resume funding of human-animal chimera research or is there consideration to maintain the moratorium on such funding?
2. What is the status of the review of the proposed change in human-animal chimera funding? Please provide details on the review and breakdown of comments regarding the proposed change.
3. To what extent has the NIH solicited external ethical analyses regarding human-animal chimera research? If the NIH has solicited external ethical analyses on this matter, please provide a complete list of the external sources with which the NIH has consulted.
4. Given numerous research advances since 2016, to what extent has the NIH considered alternative research methodologies to achieve the same ends (e.g., transplantable organs and tissues) without creation of human-animal chimeras? Please provide a list of other methodologies considered as well as justifications for their use.
5. Given the comments received in 2016 and advances in alternative methodologies, is the NIH giving consideration to altering the proposed change in human-animal chimera funding? Is the NIH giving any special consideration to prohibitions on all human-primate chimera research?

Thank you for your time and attention.

Sincerely,



Christopher H. Smith  
Member of Congress



Senator Mike Braun  
United States Senator

<sup>7</sup> Subbaraman, Nidhi. "First monkey-human embryos reignite debate over hybrid animals." *Nature*. April 15, 2021. <<https://www.nature.com/articles/d41586-021-01001-2>>



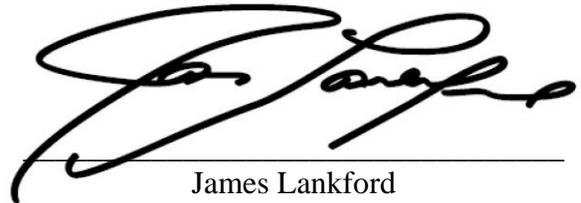
Andy Harris, M.D.  
Member of Congress



Steve Daines  
United States Senator



Michelle Fischbach  
Member of Congress



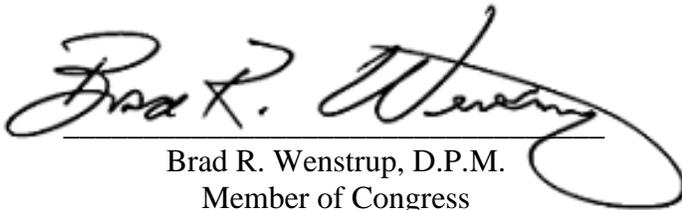
James Lankford  
United States Senator



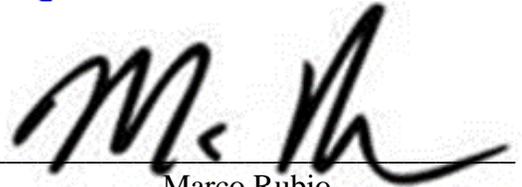
Diana Harshbarger  
Member of Congress



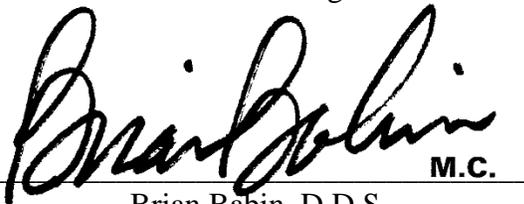
Joni K. Ernst  
United States Senator



Brad R. Wenstrup, D.P.M.  
Member of Congress



Marco Rubio  
United States Senator



Brian Babin, D.D.S.  
Member of Congress



James M. Inhofe  
United States Senator



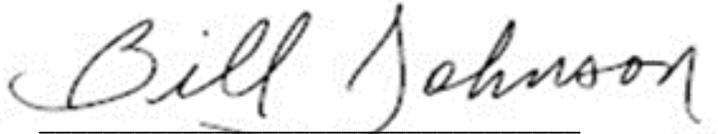
Ronny L. Jackson  
Member of Congress



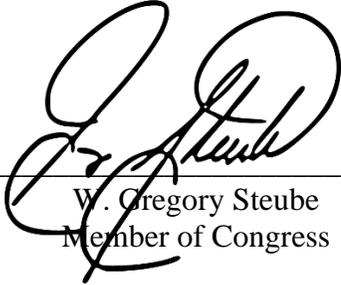
Michael S. Lee  
United States Senator



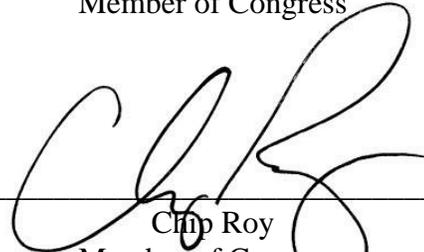
Gus M. Bilirakis  
Member of Congress



Bill Johnson  
Member of Congress



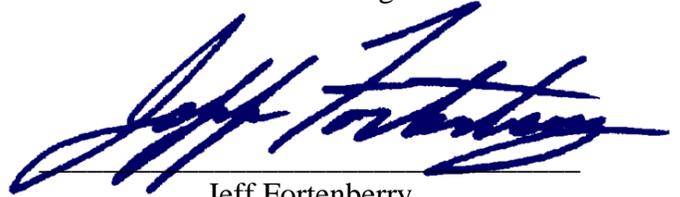
W. Gregory Steube  
Member of Congress



Cliff Roy  
Member of Congress



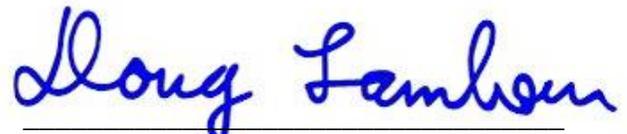
Robert B. Aderholt  
Member of Congress



Jeff Fortenberry  
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Blaine Luetkemeyer  
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Doug Lamborn  
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Steve Chabot  
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Warren Davidson  
Member of Congress



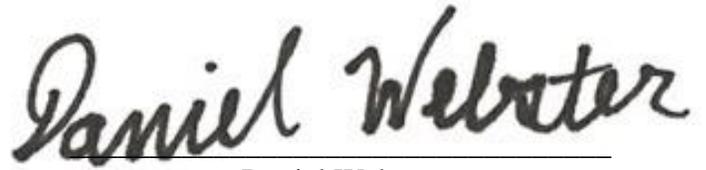
Glenn Grothman  
Member of Congress



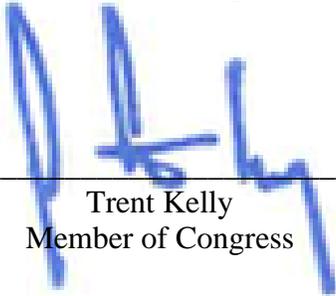
Louie Gohmert  
Member of Congress



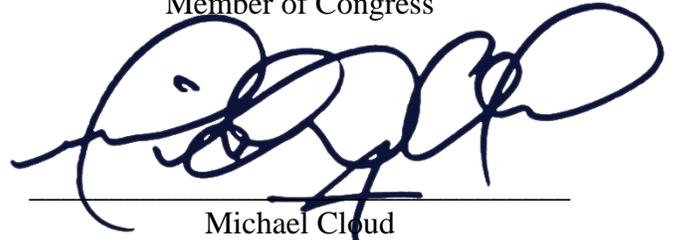
Eric A. "Rick" Crawford  
Member of Congress



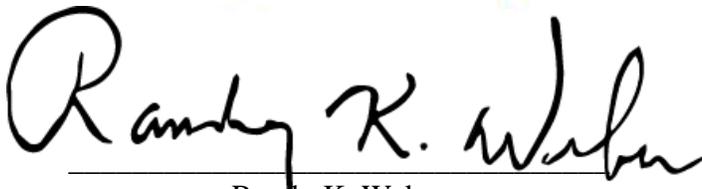
Daniel Webster  
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Trent Kelly  
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Michael Cloud  
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Randy K. Weber  
Member of Congress



Bob Good  
Member of Congress