Congress of the United States
House of Representatives
Washington, DC 20515

February 28, 2020

The Honorable Francis Collins, M.D.
Director, U.S. National Institutes of Health
600 Rockville Pike
Bethesda, MD 20892

Dear Dr. Collins,

Thank you for your important work to advance public health.

As you are aware, following a recent rise in painful primate testing at the National Institutes of Health (NIH), Congress included important language in the fiscal year 2020 federal spending package directing the agency to report to Congress by December 2020 on its efforts to reduce intramural primate research in favor of alternatives.[1]

New reports about disturbing taxpayer-funded experiments on monkeys at the National Institute of Mental Health (NIMH) in Bethesda, Maryland demonstrate why more Congressional oversight of NIH primate research is urgently needed.[2]

According to videos and other NIH documents released last month to the watchdog group White Coat Waste Project following a Freedom of Information Act lawsuit, NIMH researchers have spent at least $16 million since 2007 to damage monkeys' brains with acid, suction or burns, chain them up in tiny cages, and video record them being frightened with mechanical snakes and, as the researchers state, "hairy rubber spiders."[3,4] The NIH database shows that the same grant has also recently funded research where monkeys were given brain damage and tested on whether they could tell the difference between monkeys' faces and pieces of fruit.[5] It appears the NIH researcher who leads this project has been continuously funded to conduct similar primate testing since at least 1995.[6]

A clinical psychologist interviewed about these studies stated that the tests, "will not translate to improved outcomes for the real human patients that my colleagues and I treat for anxiety, depression and other psychological disorders."[2]

We have serious concerns about whether this questionable research deserves continued support from Congress and taxpayers. Please provide our offices with the following information:

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[1] https://docs.house.gov/billsthisweek/20191216/BILLS-116HR1865SA-JES-DIVISION-A.pdf
[2] https://www.washingtontimes.com/news/2020/feb/24/nih-research-involved-frightening-monkeys-cages/
[3] https://projectreporter.nih.gov/project_info_history.cfm?aid=10011370&icde=48141206
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6529874/?report=classic
[5] https://projectreporter.nih.gov/project_info_results.cfm?aid=10011370&icde=48141206
[6] https://projectreporter.nih.gov/reporter_SearchResults.cfm?icde=49002720

- **Project list:** Provide a list of all active intramural grants that are supporting the research program described above, including titles, project numbers, start/end dates.
- **Actively-funded grants:** For each project, please identify how many years it has been funded, how much taxpayer money it received in FY19, and the total cost over the lifetime of the project to date.
- **Past taxpayer funding:** Please provide a list of all inactive intramural grants that have supported the research program above, including titles, lifetime cost, project numbers, and start/end dates.
- **Return on investment:** For each active project, list specific examples of when and where the research has had successful direct clinical applications in humans.
- **Primate use:** How many primates were used in this research from FY15-FY19? Please breakdown by year, species and USDA pain category.
- **Primate retirement:** How many primates have been retired to sanctuaries from this project? Does the NIH—like the FDA and VA—allow primate retirement after research?

Our staffs have sought answers to these questions, but many details are not available on NIH RePORTER and other government databases.

Thank you for your cooperation.

Sincerely,

Brendan F. Boyle
Member of Congress

Brian Mast
Member of Congress

Lucille Roybal-Allard
Member of Congress

Matt Gaetz
Member of Congress

Dina Titus
Member of Congress

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

April 21, 2020

The Honorable Brendan F. Boyle
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Boyle:

Thank you for your February 28, 2020 letter to Dr. Francis Collins, Director of the National Institutes of Health (NIH), and for sharing your concerns about the use of non-human primates (NHPs) in research. As your questions pertain to the National Institute of Mental Health's (NIMH) Intramural Research Program, Dr. Collins asked that I respond on his behalf.

The information you requested concerning the NIMH Research Section on Neurobiology of Learning and Memory is included in the data tables and text that follow. Table 1 provides information related to your requests for the project list, actively funded grants (referred to as "projects" in NIH intramural research), and project funding.

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- This Research Section pioneered the use of magnetic resonance imaging (MRI)-guided minimally invasive brain surgery, which is highly valuable to scientific research.[4] Using such techniques, scientists have clarified the neural circuits underlying such mental illnesses as PTSD, schizophrenia, and obsessive-compulsive disorder – helping to pave the way for the transformative treatments of the future.

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The NIMH Research Section on Neurobiology of Learning and Memory is an outstanding and highly regarded example of NIMH-funded research, which over the course of time has continually advanced our understanding of the neural circuits that underlie fear, reward, emotional information processing, and goal-oriented behaviors. NHPs are the appropriate model for the studies carried out by this Research Section, as NHP brains are more similar to human brains than those of other common laboratory animals. This is especially true for the frontal lobe of the cerebral cortex: many parts of the frontal lobe in humans have not been identified in non-primate species and probably do not exist in those species. By contrast, clear homologues are present between parts of the frontal cortex in humans and NHPs. Exposing NHPs to aversive stimuli induces a mild defensive response, and this helps researchers identify which brain regions are integral in driving these fear responses and how they do so, enabling further research into how to diminish this drive without affecting other important behaviors. These studies are vital for furthering our studies on fear and anxiety to develop novel

treatments for anxiety disorders such as PTSD, which affects approximately 3.6 percent of U.S. adults each year.[10]

Thank you again for sharing your concerns about the use of NHPs in the NIMH Research Section on Neurobiology of Learning and Memory. I hope this response has been helpful. A copy of this response has been sent to the co-signers of your letter.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

April 21, 2020

The Honorable Brian Mast
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Mast:

Thank you for your February 28, 2020 letter to Dr. Francis Collins, Director of the National Institutes of Health (NIH), and for sharing your concerns about the use of non-human primates (NHPs) in research. As your questions pertain to the National Institute of Mental Health's (NIMH) Intramural Research Program, Dr. Collins asked that I respond on his behalf.

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Thank you again for sharing your concerns about the use of NHPs in the NIMH Research Section on Neurobiology of Learning and Memory. I hope this response has been helpful. A copy of this response has been sent to the co-signers of your letter.

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Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

April 21, 2020

The Honorable Lucille Roybal-Allard
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Roybal-Allard:

Thank you for your February 28, 2020 letter to Dr. Francis Collins, Director of the National Institutes of Health (NIH), and for sharing your concerns about the use of non-human primates (NHPs) in research. As your questions pertain to the National Institute of Mental Health's (NIMH) Intramural Research Program, Dr. Collins asked that I respond on his behalf.

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DEPARTMENT OF HEALTH & HUMAN SERVICES

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Bethesda, Maryland 20892

April 21, 2020

The Honorable Matt Gaetz
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Gaetz:

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- This Research Section discovered distinct roles for two critical emotion-processing brain regions in the expression of defensive responses to fear-provoking stimuli.[5] Importantly, using the same paradigm noted in the above example, this Research Section also found that at least two frontal cortex regions regulate emotion, presumably by interacting with the amygdala and other subcortical brain regions essential for fear expression.[6] The same frontal cortex regions that are essential for emotional regulation participate in reward processing and decision making. Other studies from this Research Section have identified frontal cortex regions critical for processing rewarding events,[7,8] which is relevant to depression.[9] Future research will attempt to understand the relationship between these seemingly disparate processes.

- The amygdala and hippocampus both contribute to defensive responses to stimuli that are known to provoke extreme, debilitating fear responses in individuals with specific phobias or PTSD. This Research Section demonstrated that disruption of these two brain regions contribute to defensive responses in different ways: disrupting the hippocampus prevented all behavioral responses to the fear stimuli, while disrupting the amygdala prevented only the fear-like defensive responses. This work underscores the crucial importance of the amygdala in assigning negative affect to stimuli, including innately threatening stimuli. Moreover, it suggests a potential strategy for treating phobias: targeting the amygdala, but not the hippocampus, with interventions could reduce phobic fear without affecting appropriate behavioral responses.[5]

- This Research Section also found that two subregions of orbitofrontal cortex (OFC; here, the part specific to primates) regulate emotional expression. Contrary to earlier reports, which

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Table 2 provides information related to your requests for primate use in this research, including number, species, and USDA pain category for each year (FYs 2015-2019). A total of 144 primates were used across all three projects from FY 2015 through FY 2019, but only a subset of these were used each year. NIH allows primate retirement to sanctuaries when compatible with the study endpoint. In most neuroanatomical behavioral studies, end of study histological endpoints preclude retirement.

Table 2. Primate Use and Primate Retirement in the NIMH Research Section on Neurobiology of Learning and Memory

Fiscal Year	Primate Species	Number of Primates Used *	Number of Primates Used per USDA Pain Category	Number of Primates Retired to Sanctuaries
2015	Rhesus	94	C: 64 D: 30	0
2016	Rhesus	102	C: 82 D: 20	0
2017	Rhesus	107	C: 73 D: 34	0
2018	Rhesus	102	C: 72 D: 30	0
2019	Rhesus	132	C: 60 D: 72	0

*Note that these counts do not represent unique sets of primates each year; for example, an individual primate represented in the 2015 count may also be represented in the 2018 count. A total of 144 unique primates were used across these projects between FY 2015 and FY 2019.

The NIMH Research Section on Neurobiology of Learning and Memory is an outstanding and highly regarded example of NIMH-funded research, which over the course of time has continually advanced our understanding of the neural circuits that underlie fear, reward, emotional information processing, and goal-oriented behaviors. NHPs are the appropriate model for the studies carried out by this Research Section, as NHP brains are more similar to human brains than those of other common laboratory animals. This is especially true for the frontal lobe of the cerebral cortex: many parts of the frontal lobe in humans have not been identified in non-primate species and probably do not exist in those species. By contrast, clear homologues are present between parts of the frontal cortex in humans and NHPs. Exposing NHPs to aversive stimuli induces a mild defensive response, and this helps researchers identify which brain regions are integral in driving these fear responses and how they do so, enabling further research into how to diminish this drive without affecting other important behaviors. These studies are vital for furthering our studies on fear and anxiety to develop novel

treatments for anxiety disorders such as PTSD, which affects approximately 3.6 percent of U.S. adults each year.[10]

Thank you again for sharing your concerns about the use of NHPs in the NIMH Research Section on Neurobiology of Learning and Memory. I hope this response has been helpful. A copy of this response has been sent to the co-signers of your letter.

Sincerely,

Joshua A. Gordon, M.D., Ph.D.
Director, National Institute of Mental Health

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DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

April 21, 2020

The Honorable Dina Titus
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Titus:

Thank you for your February 28, 2020 letter to Dr. Francis Collins, Director of the National Institutes of Health (NIH), and for sharing your concerns about the use of non-human primates (NHPs) in research. As your questions pertain to the National Institute of Mental Health's (NIMH) Intramural Research Program, Dr. Collins asked that I respond on his behalf.

The information you requested concerning the NIMH Research Section on Neurobiology of Learning and Memory is included in the data tables and text that follow. Table 1 provides information related to your requests for the project list, actively funded grants (referred to as "projects" in NIH intramural research), and project funding.

Table 1. Project List, Project Status, and Project Funding in the NIMH Research Section on Neurobiology of Learning and Memory

Status	Project Number	Project Title	Start Date	End Date	Number of Years Funded	Fiscal Year (FY) 2019 ($)	Total to Date ($)
Active	ZIA-MH-002736	Neural Substrates of Stimulus Recognition and Association Memory[1]	1996	N/A	24*	$829,678	$18,075,285*
Active	ZIA-MH-002886	Neural Mechanisms of Reward Processing and Emotion[2]	2007	N/A	13	$829,678	$12,357,839**
Active	ZIA-MH-002887	Neural Substrates of Reward Processing and Emotion[3]	2007	N/A	13	$1,659,355	$16,398,114**

*Funding data provided for fiscal years (FYs) 1998-2019 per NIMH RePORTER (https://projectreporter.nih.gov/) and internal NIMH records (data for FYs 1996-1997 could not be obtained).
**Funding data per NIH RePORTER.

[1] https://projectreporter.nih.gov/project_info_description.cfm?aid=10011349&icde=0
[2] https://projectreporter.nih.gov/project_info_description.cfm?aid=10011369&icde=0
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Return on Investment

The biomedical research community uses a variety of different measures to assess the impact or return on investment from basic science research. An individual basic science research program's contributions cannot be fully appreciated in terms of specific changes in clinical practice or specific impacts on the economy directly attributable to that specific program, because the development of a new therapeutic drug or treatment strategy is almost always built on years or decades of basic and translational research from many different laboratories. Scientific advances from the NIMH Research Section on Neurobiology of Learning and Memory have improved understanding of how the brain responds to fear, which will support future efforts to develop treatments for mental illnesses including specific phobia and post-traumatic stress disorder (PTSD). Below are some select examples of scientific advances from this Research Section.

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