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STATE OF THE SCIENCE AND FUTURE NEEDS

# NONHUMAN PRIMATE (NHP) MODEL SYSTEMS

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Acting Director of the Office of Science Policy

National Academies of Sciences, Engineering and Medicine

Presentation of Committee Charge; April 5, 2022



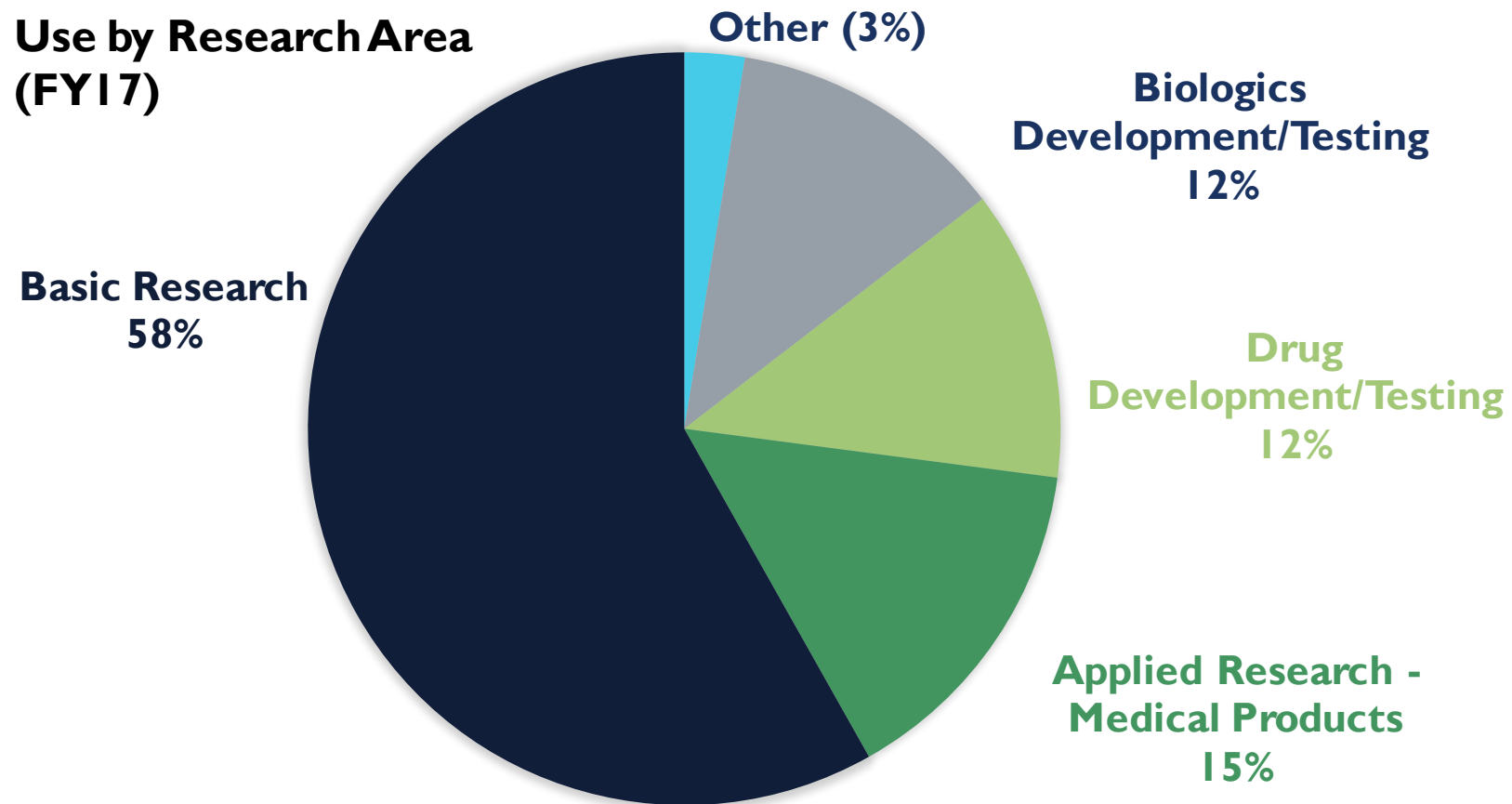
## NIH Mission

***To seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.***

TURNING DISCOVERY INTO HEALTH

# RESEARCH WITH NHPS IS CRITICAL FOR ADVANCING NIH MISSION

## Planned NHP Model Use by Research Area (FY17)



## High Priority Research Areas for NHP Model Use

- COVID-19
- AIDS/HIV
- Neuroscience
- Visual System Function and Disorders
- Reproductive Health
- Regenerative Medicine and Transplantation
- Cancer
- Diabetes

Figure Adapted from ORIP NHP Evaluation and Analysis Final Report (2018)

MAINTAINING THE HIGHEST STANDARDS

# ANIMAL WELFARE AND GOOD SCIENCE GO HAND IN HAND

## Related Laws, Policies, & Regulations

- PHS Policy
- Animal Welfare Act
- USG Principles
- Guide for the Care & Use of Laboratory Animals
- Peer Review – VAS
- IACUC Oversight

## Researchers work to:

- Use the smallest number of animals
- Consider alternatives and less invasive procedures
- Uphold the highest standards of animal welfare

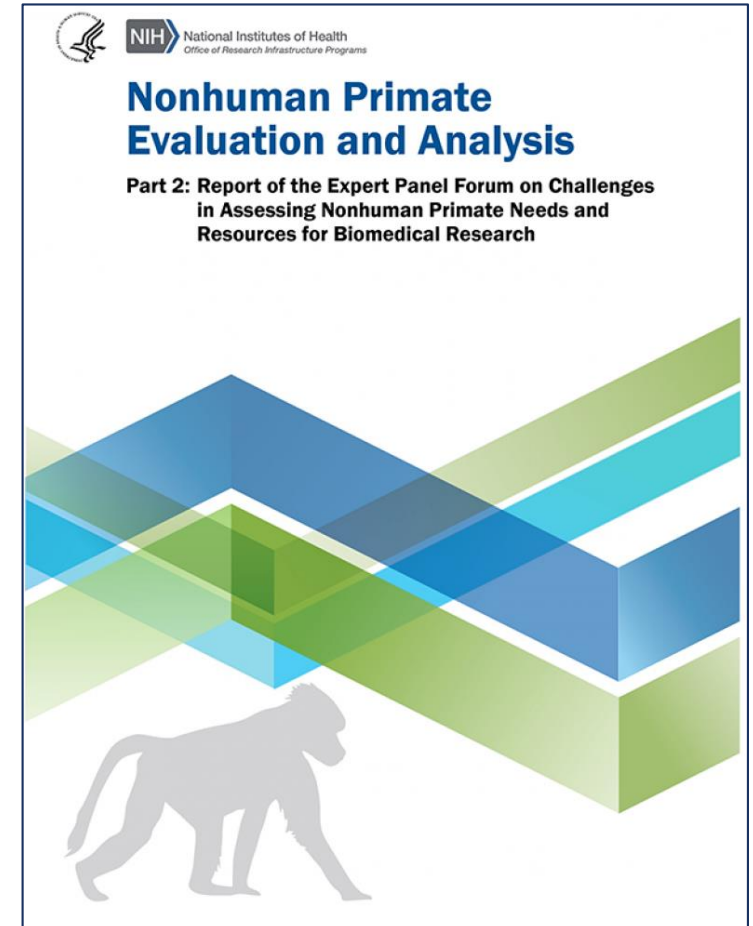
MAINTAINING THE HIGHEST STANDARDS

# ENSURING RESPONSIBLE USE OF NHPS IN BIOMEDICAL RESEARCH

ACD WORKING GROUP ON  
ENHANCING RIGOR,  
TRANSPARENCY, AND  
TRANSLATABILITY IN ANIMAL  
RESEARCH

FOSTERING RIGOROUS RESEARCH:  
Lessons Learned from Nonhuman Primate  
Models and Charting the Path Forward  
February 18-19, 2020  
NIH Campus, Bethesda MD

- Augment rigor, reproducibility, and transparency across the lifecycle of a research study
- Support rigorous and ethical study designs, including complementary approaches, to increase data validity
- Infrastructure and capacity are essential!



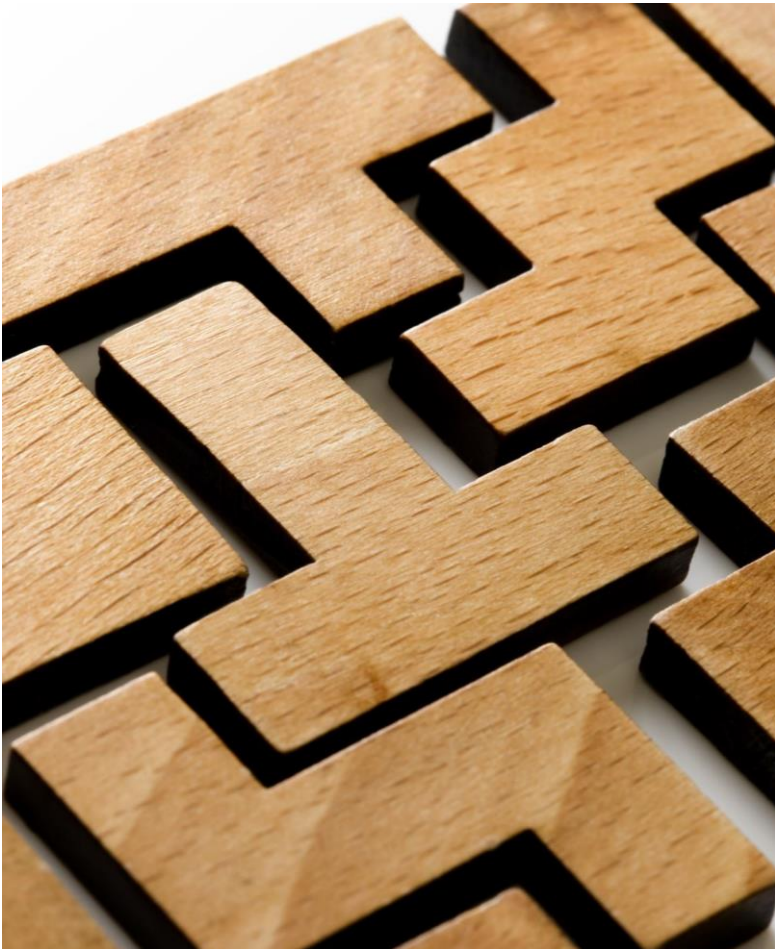
## NASEM COMMITTEE CHARGE ABBREVIATED TASK

*Based on its review of the literature and other expert input, the committee will develop a report with its findings and conclusions related to the current and future roles of NHPs in NIH-funded research. This will include the committee's findings related to gaps in research and resources, including those related to NHP availability and transportation needs.*

NASEM COMMITTEE CHARGE

## I.A. CURRENT ROLE OF NHPS IN NIH-FUNDED RESEARCH

Perform a landscape analysis of current NHP model use in biomedical research, including scientific opportunities and contributions to human health advancements.

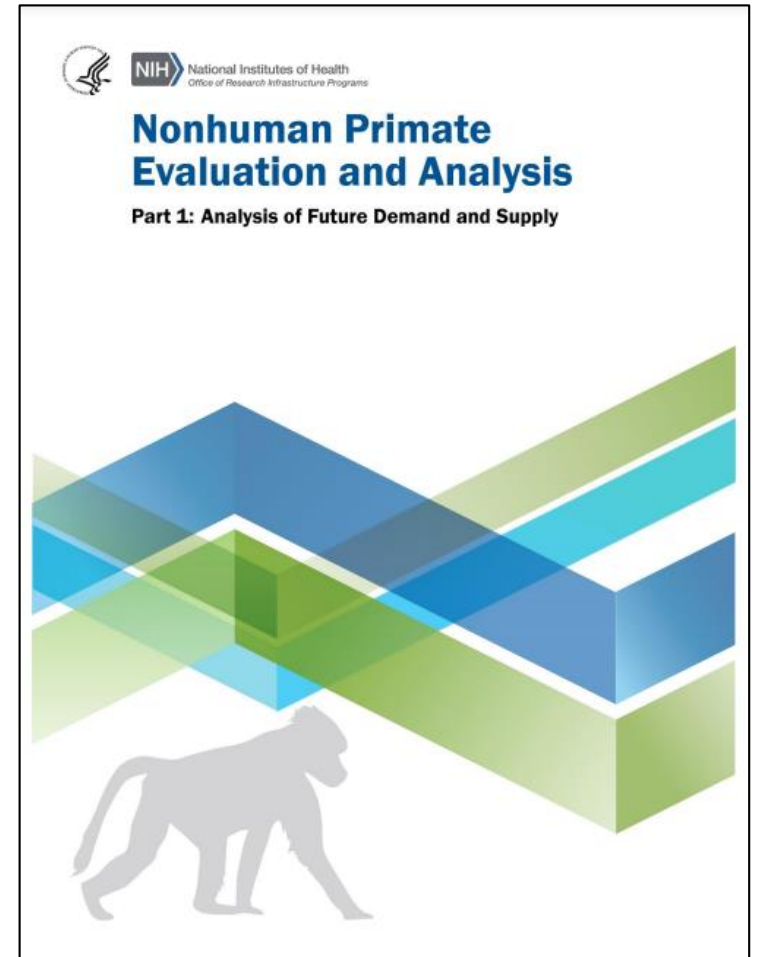


## NASEM COMMITTEE CHARGE

# I.B. NHP DEMAND DURING AND POST-PANDEMIC

Include an analysis to augment the 2018 study *Nonhuman Primate Evaluation and Analysis* to identify gaps in NHP availability, such as:

- the new demand related to COVID-19
- the general importance of aspects such as genetic variability, species type, transportation limitations, and colony size





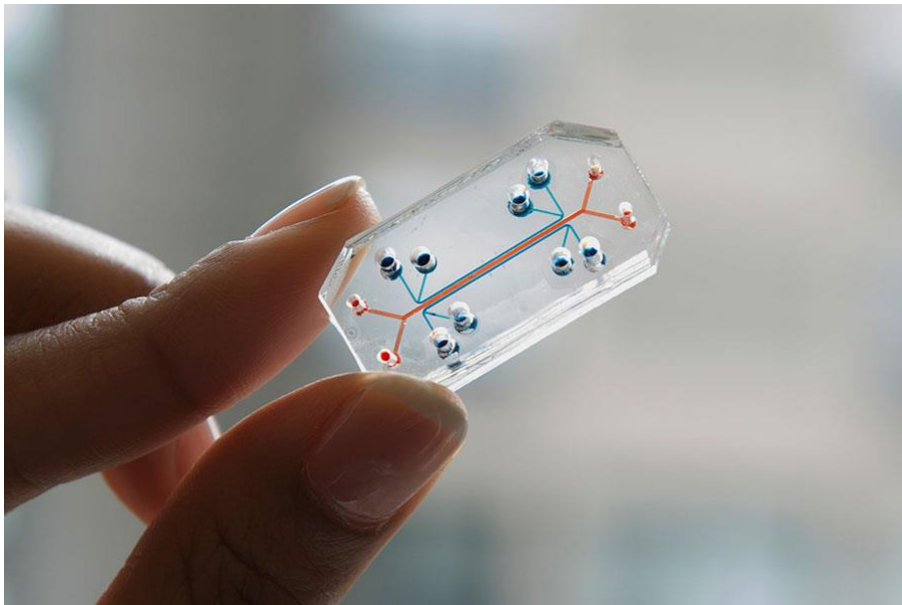
NASEM COMMITTEE CHARGE

## 2A. THE FUTURE ROLE OF NHPS IN NIH-FUNDED RESEARCH

Explore future needs/opportunities to improve human health, and challenges for biomedical research involving NHPs, including identifying areas of emerging science that may benefit from NHP research models.

## NASEM COMMITTEE CHARGE

# 2B. THE FUTURE – NEW APPROACH METHODOLOGIES



*Lung-on-a-chip for testing drug safety and efficacy. (Wyss Institute for Biologically Inspired Engineering, Harvard University Photo)*

Outline opportunities for new approach methodologies (NAMs) to complement or reduce reliance on NHP research:

- Status of research, development, and validation efforts into NAMs
- Ways to increase coordination and collaboration between researchers who use these different models

## CROSS-AGENCY EQUITY

# NIH SPONSORS OF THE CURRENT STUDY

### Office of the Director

- Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI)
- Office of Extramural Research (OER)
- Office of Intramural Research (OIR)
- Office of Science Policy (OSP)

National Center for Advancing Translational Sciences (NCATS)

National Cancer Institute (NCI)

National Eye Institute (NEI)

National Heart Lung and Blood Institute (NHLBI)

National Institute on Aging (NIA)

National Institute of Allergy and Infectious Disease (NIAID)

National Institute on Mental Health (NIMH)

National Institute of Neurological Disorder and Stroke (NINDS)



National Institutes of Health  
*Turning Discovery Into Health*

## NASEM WORKING GROUP CHARGE IN BRIEF REPORT ON THE LAY OF THE LAND

- Current NHP use in biomedical research and expected areas of future needs
- Current and future NHP supply and transportation needs
- Promise and limitations of New Approach Methodologies (NAMs)

