NPRC GOVERNMENT AFFAIRS BRIEFING HIGHLIGHTS
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The Importance of Nonhuman Primate Research for Advancing Human and Animal Health

The National Primate Research Centers (NPRCs) are a national network of dedicated teams fighting diseases from Alzheimer's to Zika and improving human and animal health and lives worldwide. In partnership with the National Institutes of Health and others, the NPRCs conduct and enable approximately 1,000 studies annually to make breakthrough discoveries of causes, preventions, treatments and cures possible. The highly regulated study of nonhuman primates is critically important for providing unique insights not available with other models and often precedes human clinical trials. Less than 1% of research with animals involves nonhuman primates, yet the impact is significant.

SUSTAINING BRAIN HEALTH THROUGHOUT THE LIFESPAN

Michele A Basso, PhD
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Professor, Biological Structure, and Physiology and Biophysics, University of Washington

Because humans share 90% of our genes with nonhuman primates, research with these animals is essential for making medical progress and improving the future of human health. Technological advances complement animal models and promise to replace animals for some aspects of safety and efficacy testing.

Parkinson's disease (PD), which affects nearly 1 million people in the U.S. and is estimated to affect 1.2 million by 2030, offers an example of how research with animals translates into medical progress.

Research with animals:

- Helped develop Deep Brain Stimulation (DBS) surgery, a life-saving treatment for people who have PD. ~160,000 people worldwide have had DBS surgery. DBS is also helping with epilepsy, dystonia and obsessive compulsive disorder.
- Is helping refine neurotechnology, such as brain-computer interface research, resulting in restored movement and speech in people who have paralysis from stroke, spinal cord injury and more.

ENSURING PREPAREDNESS FOR THE NEXT PANDEMIC

Afam Okoye, PhD
Associate Professor, Vaccine & Gene Therapy Institute and Oregon National Primate Research Center
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Infectious disease outbreaks increased the last decade. Research with animals is critical to understanding human infectious diseases, treatments, vaccines and other ways to prevent and/or cure infection.

Research with animals:

- Was critical to advance vaccines and treatments for COVID-19 and is ongoing to understand long COVID and to test vaccines and treatments.
- Is helping researchers develop vaccines and treatments to prevent and cure HIV and other infectious diseases.
  - Current anti-HIV drugs were developed and tested in nonhuman primates.
  - Research with monkeys is now at the forefront of HIV cure research.

- Is critical to understand and develop vaccines for Valley Fever, a rapidly emerging fungal disease.
- Has shown Zika infections during pregnancy can cause fetal loss.

Strategic investment in the U.S. nonhuman primate research infrastructure will enable the research community to address the HIV/AIDS epidemic and other infectious diseases that threaten public health.

HEALTHY MOMS, HEALTHY BABIES

Jenna Schmidt, PhD

Research Assistant Professor, Wisconsin National Primate Research Center, University of Wisconsin

Research with nonhuman primates advances women's health. Monkeys and humans share reproductive traits: similar organs, hormones, menstrual cycle and pregnancy.

Research with animals:

- Is helping develop novel treatments for endometriosis and polycystic ovarian syndrome, both of which can limit reproduction. In America:
  - 5-10% of women have endometriosis; annual cost: ~$50 billion.
  - 7-15% of women have PCOS; annual cost: ~$14 billion.
- Is increasing knowledge of the impact of mom's exposure to environmental factors on fetal health.
- Is improving safety of imaging tools and treatments used during pregnancy.

Investing in the NPRCs' women's health research is investing in future generations.

TAILORING HEALTH CARE SOLUTIONS TO INDIVIDUAL NEEDS

Marina E. Emborg, MD, PhD

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Diseases are complex and present across the lifespan. Precision medicine is personalized medicine that leverages novel technologies and scientific advances to understand how diseases affect people over time and to create personalized treatment plans. Ensuring safe, novel personalized molecular therapies requires research with animals.

Research with animals:

- Is critical to find ways to repair the brain of patients who have Parkinson's disease (PD), such as using pluripotent stem cells to replace dopamine-producing neurons lost as part of the disease.
- Is helping develop novel brain surgery methods, such as real-time intraoperative MRI guidance.
- Is key to determine if personalized stem cell therapy can help support cardiac function in patients who have congenital defects, the most common birth defect.

Research with animals at the NPRCs is leading to new treatments people receive when they go to their healthcare providers. Medical advances, as well as our future health and safety, depend on continuing research with animals and making investments in research at the seven NPRCs.

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The briefing was held in compliance with Congressional ethics rules.