



FASEB

Federation of American Societies
for Experimental Biology

Representing Over 120,000 Researchers

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Stephanie Murphy, VMD, PhD
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Office of Research Infrastructure Programs
6701 Democracy Boulevard, Building 1, Room 954
Bethesda, Maryland 20817

Comments submitted electronically via: stephanie.murphy@nih.gov

Dear Dr. Murphy:

On behalf of the Federation of American Societies for Experimental Biology (FASEB), I am pleased to provide comments in response to the Request for Information (RFI): FY2016-2020 Strategic Plan for the Office of Research Infrastructure Programs: Division of Comparative Medicine and Division of Construction and Instruments Programs [NOT-OD-15-056]. FASEB comprises 27 scientific societies representing over 120,000 scientists, many of whom use animal models for their research. The programs and services offered by the Office of Research Infrastructure Programs (ORIP) are crucial and provide researchers the resources they need to conduct fundamental and disease-related research. We urge NIH to maintain adequate support for the central repositories and veterinary training, provide grants to support facilities in emerging areas of animal research, encourage detailed characterization of animal models, and continue to support the National Primate Research Centers (NPRCs).

Repositories Sustainability

Repositories supported by ORIP, such as the Mutant Mouse Regional Resource Centers and the *Drosophila* Genomics Resource Center, play fundamental roles in the conduct of biological and biomedical research. These resources facilitate consistency and reduce variation among research programs and will support the efforts underway to increase rigor and transparency. It is also far more efficient to fund these resources centrally and/or regionally rather than having individual institutions maintain their own repositories. Support for the establishment of these repositories and resources was initially borne by the National Institutes of Health (NIH). A failure to maintain these programs would result in a significant loss of our intellectual and monetary investment. Therefore, we encourage ORIP to continue centralized support for these programs to maximize the value of this investment and support research rigor.

The humane transport of research animals to advance biomedical research is a critical component for fulfilling NIH's investment in these repositories, and the functionality of repositories will be severely

limited if transportation of animals between facilities is compromised or unavailable. Therefore, we hope that NIH will work with FASEB and other stakeholders to ensure that options remain available for the safe and humane transport of laboratory animals.

Emerging Technologies

New techniques and new animal models have the potential to dramatically expedite progress, and facility grants to support new and emerging areas of animal research are needed. The CRISPR/Cas technology of gene editing, for example, is an emerging technology that may transform the development of transgenic animal models. As this technology evolves, we may see a significant increase in larger transgenic animal models such as cats, dogs, rabbits, and even farm animals in addition to other model organism systems such as *Xenopus* and zebrafish. Therefore, we suggest that ORIP offer a G20 grant mechanism that would allow institutions to upgrade their facilities to develop and house these potential new animal models.

Similarly, ORIP may want to consider development of regional and/or central repositories to facilitate the use of and accommodate larger transgenic animal models. These facilities may be more efficient and broaden the number and diversity of investigators able to take advantage of these new models. As noted in the previous section, such central repositories would facilitate reproducibility between research programs.

An increase in larger transgenic animals will necessitate a larger veterinary workforce attending these animals. It would be of great benefit to both the animals they care for and the investigators they work with if more veterinarians could be integrated into the basic biomedical sciences enterprise. Therefore, we encourage ORIP to provide mechanisms to increase the number of veterinarians trained in basic biomedical sciences.

Characterization of Animal Models

Researchers depend on the accurate characterization of the organisms with which they work. Special emphasis should be placed on the phenotypic and genetic characterization of transgenic animals as well as other model organism systems including gnotobiotic animals. To this end, ORIP should develop standards for the systematic phenotypic characterization of newly developed animal models to validate genetic expressions patterns and ensure reproducibility of experiments. To further address research reproducibility, we encourage ORIP to host a workshop on: 1) the importance of characterizing new animal models and 2) the development of standards to evaluate new animal models.

National Primate Research Centers

Non-human primates are an essential component of biomedical research and play a fundamental role in both discovery and translational research. NPRCs provide both the National Institutes of Health community and outside scientists the opportunity and the resources to conduct non-human primate

research efficiently and humanely. The centers have many non-human primate models available, the infrastructure to conduct the research efficiently, and expertise of the Center faculty and staff to appropriately care for these animals. These national resources have been essential in developing treatments for some of our most devastating ailments and will continue to be important in our understanding of diseases such as HIV/AIDS and other infectious diseases, drug and alcohol dependency, women's health, diabetes and metabolic disorders (e.g., obesity), and cardiovascular disease. We urge ORIP to continue supporting the NPRCs to the fullest extent possible.

We recognize the significant role that ORIP plays in facilitating animal research to improve our understanding of human health and disease. Therefore, we urge ORIP to continue engaging and soliciting input from the research community on its strategic plan, being sure to allow sufficient time for formulation of responses.

Thank you for considering our perspective. Please do not hesitate to contact me if I can provide you with any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph R. Haywood". The signature is fluid and cursive, with a large, stylized initial "J" and "H".

Joseph R. Haywood, PhD
FASEB President