



FASEB

Federation of American Societies
for Experimental Biology

Representing Over 110,000 Researchers

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December 7, 2023

Axel Wolff, MS, DVM
Office of Laboratory Animal Welfare (OLAW)
National Institutes of Health
6700B Rockledge Drive, Suite 2500, MSC 6910
Bethesda, MD 20892

RE: Request for Information (RFI) on Proposed Guidance to Assured Institutions on Cephalopod Care and Use (NOT-OD-23-176)

Submitted electronically via portal and e-mail: olaw@mail.nih.gov

Dear Dr. Wolff,

The Federation of American Societies for Experimental Biology (FASEB) appreciates the opportunity to provide comments on the Request for Information ([NOT-OD-23-176](#)) regarding proposed guidance on the care and use of cephalopods in biomedical research. As a coalition of 26 member societies representing over 110,000 researchers across a broad range of scientific disciplines, we recognize that cephalopod research has advanced significantly over the last decade, resulting in valuable discoveries in neuroscience, cognition, genetics, and various other fields. Given the growing use and understanding of this species, FASEB supports oversight of cephalopods, provided that new policies and guidance are based upon properly tested and validated measures. The proposed guidance represents an essential first step towards this goal and we appreciate NIH's commitment to sustain optimal animal welfare and high-quality science. In formulating the final guidance, we strongly recommend dedicating time and attention to additional funding and resources that address existing knowledge gaps in cephalopod biology and welfare, areas that are described in more detail below. Commensurate support for understanding the issues funding agencies seek to regulate is essential in ensuring the scientific community is equipped with concrete evidence to conduct and oversee this emerging field of research.

FASEB's comments on the proposed guidance are provided below.

Proposed Guidance: Assured Institutions are expected to ensure that cephalopod activities are subject to review and approval by IACUCs or other oversight bodies, and subsequent post-approval oversight, in accordance with U.S. Government Principles. This would involve including cephalopod programs and facilities in semiannual evaluations. Institutions may also choose to include cephalopod programs in other methods of post-approval monitoring used by the institution and may choose to voluntarily self-report any deficiencies to OLAW. Ad hoc consultants may be invited to assist with oversight activities. Institutions using cephalopods are expected to provide appropriate husbandry and veterinary care by

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employing research, husbandry, veterinary care, and physical plant staff with qualifications and training relevant to the species being used, as determined by the IACUC or other oversight body.

Response: FASEB concurs with the Office of Laboratory Animal Welfare's (OLAW) proposed guidance outlining expectations for Institutional Animal Care and Use Committees (IACUCs) to review, approve, and oversee cephalopod activities. We appreciate the agency's recognition of the emerging data in this field and efforts to clarify the application of U.S. Government Principles to cephalopods. However, there are still gaps in knowledge and expertise that warrant further attention to ensure federal and institutional expectations keep pace with scientific developments.

To address the absence of information in this field, FASEB recommends a two-pronged approach to complement OLAW's proposed guidance to assured institutions: 1) creating cephalopod-specific training resources for IACUCs, Attending Veterinarians, and other relevant animal care staff; and 2) establishing dedicated funding mechanisms for cephalopod welfare and refinement studies. The latter is discussed in the second section.

FASEB appreciates the proposed guidance's statement about inviting ad-hoc consultants to assist with oversight activities. Considering the extensive breadth of cephalopod research—from foundational biology studies to invasive-type procedures to explore neurobiology—it is essential for IACUCs to have adequate knowledge and understanding of these species when reviewing and approving research protocols. However, numerous IACUCs lack cephalopod-specific expertise and oftentimes overlook their ability to leverage ad-hoc consultants. To resolve this, FASEB recommends strengthening language in the final guidance to encourage institutions to appoint ad-hoc consultants and consult with subject matter experts when performing reviews or other forms of cephalopod oversight.

Educating the lab animal and veterinary community on the appropriate care and use of cephalopods is vital for safeguarding animal welfare and scientific rigor. Therefore, we encourage OLAW to develop training resources specifically for IACUCs, Attending Veterinarians, and other relevant animal care staff to foster greater awareness and promote evidence-based decision-making. While we appreciate OLAW's inclusion of external guidelines, databases, and organizations in its *Cephalopods in Research* [webpage](#), many of the listed training resources and websites are largely incomplete, difficult to navigate, and centered on European standards. Recognizing that Europe has implemented standards at a faster pace, it may be beneficial to enhance ongoing U.S. efforts such as the Compliance Unit Standard Procedure (CUSP) Sharing Site with new factsheets, training modules, webinars, and interactive workshops. Additionally, FASEB recommends collaborating with other NIH Institutes and Centers (I/Cs) to provide veterinary training and education grants (e.g., R25 mechanism) specific to cephalopod welfare and care to strengthen the expertise necessary for maintaining these colonies. We encourage OLAW to consult with research and veterinary experts in the development of these resources and partner with scientific societies such as FASEB to maximize their networking capabilities and ensure information is broadly and equitably disseminated.

Proposed Guidance: IACUCs and oversight bodies are encouraged to develop institutional policies and Standard Operating Procedures (SOPs) that summarize expectations and promote consistency and quality of cephalopod care and use. OLAW recognizes that there is tremendous variation in the life history, reproductive strategies, development, and captive breeding challenges among the several hundred known cephalopod species. Care requirements will necessarily differ based on these biological and

environmental factors. In addition, cephalopod use varies with research aims (please see the OLAW Cephalopods in Research webpage for selected resources on these topics). Institutions have the discretion to develop institutional guidance that works best for their needs but should base their requirements on the U.S. Government Principles, as well as the most current data and professionally accepted standards. The Guide for the Care and Use of Laboratory Animals, 8th edition includes a section on aquatic animals with information on water quality and life support systems that can assist with some aspects of cephalopod care. In addition, information on current practice standards may be found on the AAALAC Resources page. The AVMA Guidelines for the Euthanasia of Animals provide guidance on the humane euthanasia of invertebrates, and institutions are expected to follow the most current version of these guidelines for the euthanasia of cephalopods. Practice standards will evolve based on new information in this expanding area of interest, and institutions are expected to keep apprised of the most updated information. Institutions are also encouraged to share their knowledge on the welfare of these research animals in conferences and publications.

Response: FASEB agrees with the proposed guidance regarding institutional policies and Standard Operating Procedures (SOPs). We appreciate the flexibility afforded to IACUCs to develop guidance in accordance with local needs while abiding by the U.S. Government Principles. Additionally, we commend OLAW for acknowledging the tremendous variation within cephalopod species and research areas, as this contributes to the challenge of establishing standardized guidelines and practices for conducting and supervising studies in this field.

While the proposed guidance appropriately recognizes the need for institutions to adjust practice standards in accordance with the latest data, the absence of research and funding mechanisms to specifically study cephalopod welfare prohibits them from doing so. Given the applicability of this research across a vast array of scientific disciplines, FASEB recommends collaborating with and providing increased funding to the Office of Research Infrastructure Programs (ORIP) within the Office of Director's Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI) to establish a new Common Fund program that supports research and innovation in the care and use of cephalopods. This new program is consistent with the Common Fund's mission to address high-priority challenges impacting the broader scientific community and could address key scientific gaps in the field including but not limited to analgesics and other refinement techniques, housing, handling, species-specific socialization and husbandry, and pain perception. Furthermore, to achieve comprehensive implementation and sharing of new findings, this program could consider funding validation studies and developing data sharing guidelines in coordination with OLAW's policy and education office.

In addition to the trans-NIH effort, individual I/Cs could sponsor complementary funding mechanisms to allow researchers to investigate discipline-specific areas that remain understudied, including embryology and development, reproduction, neurocognition, and regeneration. Because cephalopods are richly diverse, a deeper understanding of how these biological processes differ across this species is essential for advancing the field while maintaining high-quality welfare and care. This level of support for cephalopod research and welfare methodologies suitably accompanies OLAW's proposed guidance and ensures future policy developments and requirements are anchored in verifiable evidence.

Conclusion

FASEB appreciates the opportunity to offer comments on the proposed guidance and thanks OLAW for engaging with the scientific community prior to implementation. As noted above, we support cephalopod oversight and recognize the importance of relying upon local IACUCs and subject matter experts to address key questions in this rapidly evolving field. FASEB's recommendations are intended to complement OLAW's current efforts on this topic and ensure there is commensurate support to address existing knowledge gaps and lack of expertise. We welcome the opportunity to collaborate with OLAW on future endeavors related to these issues and together advance our shared goal of promoting humane animal care and use.

Sincerely,

A handwritten signature in black ink, appearing to read "Mary-Ann Bjornsti". The signature is written in a cursive, flowing style.

Mary-Ann Bjornsti, PhD
FASEB President