Stephen Watts to chair organizing committee for NIH workshop
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Stephen A Watts, Ph.D, a professor in the Department of Biology and Nutrition Obesity Research Center (NORC) [1], has been selected to chair the organizing committee for the ORIP/DPCPSI/OD-NIH workshop on “Defining Nutrition in Zebrafish and other Biomedical Research Diets: Needs and Challenges.”

The Office of Research Infrastructure (ORIP) at NIH is supporting research community efforts to improve lab animal nutrition and increase rigor and reproducibility in biomedical research. Watts and the committee will address further development of standardized diets and feed management strategies which promote healthy animal husbandry, thus improving experimental design and outcomes.

A workshop was held at NIH in July 2018 to develop a roadmap for enhancing nutritional competency in biomedical research.

**Purpose of the Meeting:** Aquatic animal species, such as zebrafish (*Danio rerio*), are powerful
models for studying human development, behavior, genetics, and disease. The ability to produce transgenic and mutant lines provides biomedical researchers with many options for developing models of human diseases and for developing relevant therapeutic approaches. Different facilities and laboratories use a variety of diets and feeding protocols to maintain these models. In many laboratories zebrafish are reared with a combination of live feed (ex vivo) and/or one of many undefined commercial diets. Commercial diets used in zebrafish husbandry differ significantly in ingredient and nutrient composition and often contain preservatives, lakes, dyes, antinutritional factors, or bioactive food compounds. Studies indicate that the length, weight, sexual maturation, fecundity, and mortality of zebrafish can vary significantly with different diets. Unfortunately, impacts of diet on zebrafish health and behavior and corresponding implications for zebrafish research outcomes are not well described. Currently, the daily dietary nutrient requirements of almost all nutrients have not been investigated. There is also no consensus among aquatic facilities, researchers, and commercial vendors on nutritional requirements at various life stages (i.e., larval, juvenile, and adult) or for particular research applications to minimize husbandry variations among aquatic facilities or laboratories. Complicit in this lack of consensus is a community-wide lack of understanding of the role of nutrition in animal development, health, and research outcomes. To address this gap, the Office of Research Infrastructure Programs (ORIP) is sponsoring a workshop to bring together members of the zebrafish scientific community, with expertise in zebrafish and other aquatic and relevant models, for a day of discussion. The workshop attendants will assess the needs and challenges of developing defined reference diets and optimized feed management strategies that will support normal zebrafish development and physiology, and will facilitate the analysis of phenotypes in a standardized nutritional environment. Standardization and education will promote rigor and reproducibility in some zebrafish studies and enhance the use of zebrafish and other aquatic models in biomedical research.

Workshop Agenda [2]

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