



WORKSHOP AGENDA

Defined Reference Diets for Zebrafish and Other Aquatic Biomedical Research Models: Needs and Challenges

Monday, July 30, 2018

Office of Research Infrastructure Programs (ORIP),
6701 Democracy, 9th Floor Conference Room 987/989, Bethesda, Maryland



**Defined Reference Diets for Zebrafish and Other Aquatic Biomedical Research
Models: Needs and Challenges Workshop**

Monday, July 30, 2018

Objectives:

- Review diet development strategies, where available, in other biomedical model species.
- Assess the current nutrition status of zebrafish.
- Describe the need for defined diets for maintenance and experimental stocks, including assessment of life stage requirements.
- Discuss the potential impact of defined reference diets on genetic stocks used in biomedical research, their effect on development, physiology and expressivity of disease/mutant phenotypes.
- Identify obstacles and evaluate strategies that may lead to a successful consensus, acceptance, and implementation of defined reference diets among the different scientific community stakeholders.
- Define an educational approach to informing the community and associated partners (journals, organizations, granting agencies, etc.).
- Determine whether/how the approach to develop a defined reference diet for zebrafish could be applied to other aquatic models, and animal models in general.

Location:

Office of Research Infrastructure Programs (ORIP), 6701 Democracy, 9th Floor Conference Room 987/989, Bethesda, Maryland.

Organizing Committee (OC):

Stephen A. Watts (Chair), University of Alabama at Birmingham, AL

Diana Baumann, Stowers Institute for Medical Research, MO

Miguel Contreras, ORIP, NIH, Bethesda, MD

Willie McCullough, ORIP, NIH, Bethesda, MD

John Rawls, Duke University School of Medicine, NC

Thomas J. Smith, ORIP, NIH, Bethesda, MD

Lilianna Solnica-Krezel, Washington University School of Medicine, MO

Robert Tanguay, Oregon State University, OR

Zoltan Varga, University of Oregon, OR

Desiree Vonkollmar, ORIP, NIH, Bethesda, MD

Sige Zou, ORIP, NIH, Bethesda, MD

Workshop Schedule:

7:30 - 8:00 On-Site Registration

8:00 - 8:25 Introduction and Welcome

Stephanie Murphy, Division of Comparative Medicine Director, ORIP, NIH
Stephen Watts (OC Chair), University of Alabama at Birmingham, AL

8:25 - 12:00 Session 1: Historic perspectives, current diets, ingredient considerations, and feeding management in the husbandry of zebrafish and other animal models: a comparative analysis.

Session Chairs: Robert Tanguay, Oregon State University, and Stephen Watts, University of Alabama at Birmingham

Speakers:

8:25 am: *The history of rodent nutritional research and the development of standardized diets: lessons learned.* Forrest Nielsen, Grand Forks Human Nutrition Research Center, U.S. Department of Agriculture

9:05 am: *The role of nutritional research in developing production aquaculture: applications to zebrafish culture.* Ronald Hardy, Aquaculture Research Institute, University of Idaho

9:45 am: *The history of nutrition and diet development in Drosophila and related insects.* William Ja, Scripps Research Institute

10:15 - 10:30 Break¹

Speakers:

10:30 am: *The National Animal Nutrition Program: Relevance to zebrafish and lab animal models.* Delbert Gatlin, Wildlife and Fisheries Sciences, Texas A&M University

11:00 am: *The role of feed management in promoting healthy nutrition in zebrafish.* Chris Lawrence, Boston Children's Hospital, Harvard University

11:20 am: *Feed and Ingredient Safety: What we should consider and how we move forward.* Mark Tye, Zebrafish Core Facility Manager, University of Minnesota

11:40 am: *Nutrition as a variable in European research communities.* Robert Geisler, Karlsruhe Institute of Technology, Germany; European Zebrafish Resource Center

12:00 - 12:10 Break¹

12:10 - 1:00 Working Lunch. *Aquatic Community Survey / Current husbandry of zebrafish.* Diana Baumann, Stowers Institute, and Zoltan Varga, ZIRC/ University of Oregon

1:00 - 3:35 Session 2: The impact of diet variation on health and experimental outcomes of zebrafish and other aquatic models.

Session Chair: John Rawls, Duke University School of Medicine

Speakers (15 min presentation and 5 min discussion):

1:00 pm: *The impact of diet on digestive physiology research in zebrafish.* Steven Farber, Carnegie Institution for Science

1:20 pm: *The impact of diet on host microbiome.* John Rawls, Duke University School of Medicine

1:40 pm: *Obesity and adipose distribution in relation to nutrition.* James Minchin, University of Edinburgh, Scotland

2:00 pm: *Nutrition and cancer.* Charles Kaufman, Washington University School of Medicine

2:20 pm: *Zebrafish Models for Obesity and Type 2 Diabetes Mellitus Research,* Liqing Zang, Mie University, Japan

2:40 pm: *Nutrition and toxicology.* Robert Tanguay, Oregon State University

3:00 pm: *Diet and life stage: what we need to know.* Louis D'Abramo, Past-President World Aquaculture Society, University of Alabama at Birmingham

3:20 - 3:35 Break¹

3:35 - 4:45 Session 3: Development of recommendations, discussion, and summary

Session Chairs: Committee members.

4:45 - 5:00 Final comments and adjourn

¹: Lunch and refreshments cannot be provided by Government Funds. Therefore, meals and light refreshments are at the expense of attendees.