



# Fish Health Section



The official link to the FHS website is: <http://www.afs-fhs.org/>

## FHS NEWS

### Announcement for ISAAH 2018!

The Atlantic Veterinary College (AVC) at the University of Prince Edward Island is proud to partner with the Prince Edward Island BioAlliance and the Fish Health Section of the American Fisheries Society (FHS) to co-host the eighth International Symposium on Aquatic Animal Health ([ISAAH 2018](#)). The 2018 event will be held at the Prince Edward Island Convention Centre from September 2 to 6 in beautiful Charlottetown, PEI, Canada.

<http://www.upei.ca/communications/news/2017/04/atlantic-veterinary-college-and-pei-bioalliance-co-host-2018-international-symposium>

## STUDENTS AND EARLY CAREER MEMBERS

A new early career member profile has been posted on the Students and Early Career Members blog. Nora Hickey is the Program Veterinarian at the Northwest Indian Fisheries Commission. Learn more about Nora and her experiences here - <http://afs-fhs-students.blogspot.ca/2017/05/early-career-member-profile-nora-hickey.html>

We'd also like to remind everyone to check out our LinkedIn page ([http://www.linkedin.com/groups?home=&gid=8129129&trk=groups\\_guest\\_about-h-logo](http://www.linkedin.com/groups?home=&gid=8129129&trk=groups_guest_about-h-logo)). The goal of the page is to help fish health students and budding professionals find each other and get connected. We are hoping that this will allow students to gain mentorship from young professionals and provide a platform to post jobs, interesting questions and general ideas surrounding fish health. Hope to see you on there!

Finally, we're always looking for people at any stage of their career to profile on the blog. Previous profiles can be found here - <http://afs-fhs-students.blogspot.ca/search/label/profiles>. If you're interested in participating or have any questions/suggestions for us, please contact us at [student.section.fhs@gmail.com](mailto:student.section.fhs@gmail.com).

## **MEETINGS, WORKSHOPS AND COURSES**

### **North American Comparative Immunology Workshop North Carolina State University, Raleigh, NC June 12-15, 2017**

Welcome to the annual North American Comparative Immunology Workshops. These meetings are designed to foster collaborations among established investigators, postdoctoral fellows and graduate students interested in immune function in a wide range of model and non-model organisms.

As a field, comparative immunology is undergoing a transformation propelled by the emergence of new and innovative genomic technologies and the recognition of a wider biological role for immunity. The study of organismal models with simple morphology or exceptional biology provides unique insight into immunobiology, medicine and evolution and the potential for novel therapeutics.

At NACI, we highlight research in the evolution of immune systems, development of immune cells, the immune dialogue between host, microbiota, and pathogens, as well as ecological aspects of disease. Students are strongly encouraged to present their research. The workshops provide a venue for exciting interactions to generate new ideas and collaborations.

We look forward to seeing you at our 2017 NACI Workshop in Raleigh, North Carolina! For more information, please visit the website: <http://naciworkshop.com/>.

### **2017 Western Fish Disease Workshop Clearwater Resort, Suquamish, WA June 20-22, 2017**

The 58<sup>th</sup> Western Fish Disease Workshop is being co-hosted by the NWIFC and WDFW and will be held at the Suquamish Clearwater Resort on the Kitsap Peninsula in Washington on June 20-22, 2017. We are now encouraging interested individuals to register, reserve their lodging, and sign up to give an oral presentation or poster. For details on the workshop and the CE session which will be on Quality Management System Training, we encourage all to go to our website at <http://wfdw.nwifc.org>.

Due to a higher than expected turnout for the upcoming Western Fish Disease Workshop in June, we are close to using up all of the rooms that were set aside for our meeting at the Clearwater Resort in Suquamish, WA. If you have not reserved lodging yet for the meeting and are not able to get a room at the Resort, we have reserved a block of rooms at the nearby Poulsbo Inn (<http://www.poulsboinn.com/>) to handle the overflow. The Poulsbo Inn is located about 4.5 miles down the road from the Clearwater Resort. The block of rooms are reserved under the name "The Western Fish Disease Workshop" and are at the government rate of \$91/night (double occupancy). The best

way to reserve a room is by calling one of the following numbers (1-800-597-5151 or 1-360-779-392). If you reserve on line, make sure you note that you are with the Western Fish Disease Workshop to ensure that you get the government rate.

**Some of the deadlines are getting closer for the 58<sup>th</sup> Western Fish Disease Workshop that will be held on June 20-22, 2017 at the Suquamish Clearwater Resort in Washington State. Important deadlines include:**

- **Friday June 9th:** Last day to purchase guest tickets for banquet

**Also, note that the preliminary program is now available for viewing on our website.**

Please open the Word document entitled, “Western Fish Disease Workshop Announcement 05-16-2017” for full information on this great meeting and the PDF entitled, “SPECIAL SESSION SCHEDULE (2)” for information on a special session.

### **Fourth Australasian Scientific Conference on Aquatic Animal Health & Biosecurity**

**The Pullman Reef Hotel, Cairns, Queensland, Australia  
July 10-14, 2017**

The Fourth FRDC Australasian Scientific Conference on Aquatic Animal Health & Biosecurity will be held in Cairns, Queensland, Australia – gateway to the Great Barrier Reef and Daintree rainforest. The conference provides a forum for presentation of research, diagnostic, epidemiology, management and policy issues encompassing all areas of aquatic animal health and bio-security.

For more information on this conference and how to register, please see the word documents, “Second announcement 4th Australasian Scientific Conference on Aquatic Animal Health & Biosecurity 2017” and “4th Australasian Conference Rego form July 2017”.

### **2017 Salmon Disease Workshop – Final Announcement Corvallis, Oregon July 24 – August 4, 2017**

This workshop is designed for professionals working in the fish health field and will emphasize recent advances and developments in our understanding of salmonid diseases. The workshop is limited to 20 participants. Registration closes Jun 1.

For more information, or if you wish to receive graduate credit and to register, please contact Dr. Jerri Bartholomew at [bartholj@science.oregonstate.edu](mailto:bartholj@science.oregonstate.edu)

**Registration:** [https://apps.ideal-logic.com/cms?key=F3T9-25VWY\\_K9KH-5PTF\\_37f45578](https://apps.ideal-logic.com/cms?key=F3T9-25VWY_K9KH-5PTF_37f45578)

**Information:** <http://microbiology.science.oregonstate.edu/salmon-disease-workshop>

**23rd Annual USFWS Aquaculture Drug Approval Coordination Workshop**  
**Bozeman, MT**  
**July 31 - August 3, 2017**

The 23<sup>rd</sup> Annual USFWS Aquaculture Drug Approval Coordination Workshop will be held July 31 to August 3, 2017 at the Best Western Plus GranTree Inn in Bozeman, MT.

For more information and registration for the workshop, please visit the workshop website at: [https://www.fws.gov/fisheries/AADAP/aquaculture\\_workshop.html](https://www.fws.gov/fisheries/AADAP/aquaculture_workshop.html).

**Health and Colony Management of Laboratory Fish**  
**MDI Biological Laboratory**  
**August 13–19, 2017**

Health and Colony Management of Laboratory Fish is a short course to help colony managers, researchers and veterinarians monitor and maintain the health of a colony of aquatic organisms. This course is broad and is appropriate for technical staff, students, postdocs, investigators, as well as veterinarians and veterinary trainees.

The course consists of lecture, laboratory exercises and discussions. With a high faculty to student ratio, during the course there are ample opportunities for students to discuss unusual and/or unsolved diagnostic case experiences from their home laboratories as problem-solving exercises.

<https://mdibl.org/course/health-and-colony-management-of-laboratory-fish/>

**18<sup>th</sup> International Conference on Diseases of Fish and Shellfish**  
**Belfast, Northern Ireland**  
**September 4-8, 2017**

The 18<sup>th</sup> International Conference on Diseases of Fish and Shellfish in Belfast, Northern Ireland takes place from the 4<sup>th</sup> – 8<sup>th</sup> September. The Conference will include a full scientific programme including keynotes, oral presentations, poster sessions and workshop as well as a histopathology workshop that will take place on Sunday 3<sup>rd</sup> September. During your stay in Belfast you will experience a “Taste of Ireland” including a Civic Reception hosted by the Lord Mayor of Belfast and a gala dinner at the “World’s Leading Tourist Attraction” Titanic Belfast. We also invite you to participate in a study visit to the Fish Testing Station at Bushmills, located on the beautiful north coast of

Ireland as well as a visit to the UNESCO site at the Giant's Causeway or the Old Bushmills Distillery established in 1608.

We look forward to welcoming you to Belfast and Northern Ireland in September.

Please click on the picture below to be directed the website.



**Fish Feed & Nutrition Workshop**  
**Brudenell, Prince Edward Island**  
**September 11-14<sup>th</sup>, 2017**

This workshop is an industry-focused event that takes place every other year in various locations across North America. The workshop is designed to provide a forum for discussion similar to the larger International Symposium on Fish Nutrition and Feeding but with a focus on fish feed and nutrition activities in Canada, Mexico and the USA. The schedule includes presentations on basic and applied topics while leaving plenty of time for interactions and healthy debates (conflicting viewpoints are recognized as passionate engagement!). The workshop is designed to provide a casual atmosphere with only one room and one talk at a time. The agenda covers current challenges that the industry is facing, reviews key research focus areas and offer creative solutions and opportunities to the challenges ahead.

For more information, please visit the workshop website:  
<https://ffnw17.com/>

**JOBS/GRADUATE ASSISTANTSHIPS**

**Aquatic Animal Health Veterinarian: THREE Positions**  
**Washington Department of Fish and Wildlife**  
**Spokane, WA or Vancouver, WA or North Puget Sound area, WA**

This recruitment is to fill two (3) permanent full-time Aquatic Animal Health Veterinarian positions in the Fish Program, Science Division, Genetics and Health Laboratories. The duty stations are in either Spokane WA, Vancouver WA or the North Puget Sound area. This position reports to the Supervisor of the Genetics and Health Laboratories in the Fish Program, and as a licensed veterinarian is responsible for fish health and public health by compiling; maintaining; planning; conducting; analyzing; interpreting; and

reporting on issues related to fish health, zoonotic and non-zoonotic fish pathogens, antibiotic resistance associated with therapeutants; and by conducting epidemiological investigations as connected to fish hatchery facilities and related natural origin fish populations. Specifically, this work addresses current and emerging risks associated with fish diseases, prevalence of pathogens, and associated host response(s) (i.e., immunological changes), environmental variables that affect the disease status of fish populations, and the potential effects of disease status on human populations as it relates to zoonotic fish pathogens. This position will provide veterinary and epidemiological support when needed to minimize health risks, improve biosecurity protocols, and collect health-based samples involving live fish and provide comprehensive health assessments for fish populations. As such, this position maintains veterinarian-client-patient-relationships (VCPRs) with the WDFW, and is the Veterinarian of Record (VOR) for a specific set of hatchery facilities within a pre-determined portion of Washington State as needed and in accordance with legal allowances. This position will adhere to state and federal laws concerning the practice of veterinarian medicine; conduct surveillance for regulated and reportable pathogens to meet the requirements of the Salmonid Disease Control Policy of the Co-Managers of Washington State (Policy); monitor hatchery populations for zoonotic and non-zoonotic fish pathogens; provide directions to Fish Program staff, non-veterinary Fish Health Specialists, and aquaculturists regarding compliance with the Policy; and ensure that when prescribing therapeutants antimicrobial resistance and tissue residue withdrawal periods are considered to protect consumer safety. This position is expected to collaborate with veterinarians and non-veterinary Fish Health Specialists employed by WDFW, Washington Departments of Agriculture and Health, with tribal co-managers, federal government (USDA-APHIS-VS, USFWS, USGS, and NOAA), and with universities, and will maintain open communication with appropriate federal, state, and tribal agencies concerning public health, when necessary.

For more information on this positions, please go to the following websites:

Spokane Position

<https://www.governmentjobs.com/careers/washington/jobs/1727934/permanent-aquatic-animal-health-veterinarian-02276-17>

Vancouver Position

<https://www.governmentjobs.com/careers/washington/jobs/1732792/permanent-aquatic-animal-health-veterinarian-04120-17>

North Puget Sound Area (Northwestern Washington)

<https://www.governmentjobs.com/careers/washington/jobs/1744365-0/permanent-aquatic-animal-health-veterinarian-04604-17>

**Postdoctoral Fellow/Research Scientist (Fish Health/Immunology)**  
**University of Idaho**  
**Moscow, ID**

The Postdoc/Research Scientist will take the lead on one or more projects related to vaccine development/commercialization, immunology, or fish health/disease management. The ideal candidate will have completed Ph.D. studies in a relevant biological discipline or have previous postdoctoral experience. The individual must be a leader and possess excellent verbal, written and technical skills. A demonstrated record of accomplishment is required. The successful applicant will be expected to produce research reports as required and publish in appropriate high quality journals. It is expected that the candidate will work with the PI to pursue outside funding support for new and ongoing projects. This position industry supported and offered as a one-year contract contingent upon further funding.

For more information and how to apply, please see the word document entitled, "Postdoc Res Scientis job add".

**Post-Doctoral Associate**  
**University of Minnesota, Minnesota Aquatic Invasive Species Research Center (MAISRC)**  
**St. Paul, MN**

This position is fully supported by a research project focused on the discovery of novel viruses from fish and mussels for the purpose of better understanding the ecology of viral communities and exploration of pathogens for biocontrol of invasive species. As part of a diverse and interdisciplinary team, the candidate will participate in lab, field and computational activities.

For more information, please see the PDF entitled, "Post Doctoral Associate - 317085 UMN".

## **RESOURCES/NEWS**

### **Western Fisheries Science News: April 2017 - Issue 5.4**

Dear WFRC Colleagues, Partners and Friends;

Please enjoy the latest issue of our Center newsletter, designed to update you on science, new publications, events and news from the U.S. Geological Survey, Western Fisheries Research Center (WFRC). WFRC scientists conduct research on aquatic animal health; restoration ecology; and drivers of ecosystem change at four different field stations throughout Washington and Oregon. We hope that this newsletter will help

familiarize you with WFRC science and update you on our latest developments. Please forward to colleagues who may also benefit from these communications.

Read online: <http://wfrc.usgs.gov/newsletter/>

## **NAHMS Aquaculture 2020**

### **NAHMS seeks your help in selecting the focus of the Aquaculture 2020 study.**

The National Animal Health Monitoring System (NAHMS), a nonregulatory unit of USDA–APHIS–VS, is developing its Aquaculture 2020 study. This study is expected to include production of fish, crustaceans, and mollusks for various end uses.

NAHMS strives to collect information that will be most beneficial to the stakeholders. Your input is essential if we are to identify key health issues and fill information gaps facing the U.S. aquaculture industry sectors.

Please complete a brief survey on line in SurveyMonkey to:

- tell us what you consider to be the most important health issues facing the aquaculture industry.
- help identify the critical information needs regarding health-management practices used in the U.S. aquaculture industry sectors.
- share your opinion on how we can encourage aquaculture producers to participate in the Aquaculture 2020 study.

NAHMS will use results from the needs assessment survey to develop the information objectives that will shape the actual NAHMS study.

**The survey will be available from March 22 through May 31<sup>st</sup>, 2017.**

Please use this link to take the survey:

<https://www.surveymonkey.com/r/NAHMSAqua2020>

## **Journal of Aquatic Animal Health**

### **New Issue Contents**

**Volume: 29, Issue: 2, 2017**

#### **Comparison of Selected Nonlethal Samples from Adult Steelhead for Detection of Infectious Hematopoietic Necrosis Virus Using Cell Culture (p. 67-73)**

*David R. Burbank, Tyson R. Fehring & Luciano V. Chiaramonte*

#### **Optimization of a Plaque Neutralization Test (PNT) to Identify the Exposure History of Pacific Herring to Viral Hemorrhagic Septicemia Virus (VHSV) (p. 74-82)**



*Lucas M. Hart, Ashley MacKenzie, Maureen K. Purcell, Rachel L. Powers & Paul K. Hershberger*

**Validation of Fermentation and Processing Procedures for the Commercial-Scale Production of a Live, Attenuated *Edwardsiella ictaluri* Vaccine for Use in Channel Catfish Aquaculture (p. 83-88)**

*Terrence E. Greenway, Todd S. Byars, Robert B. Elliot, Xixuan Jin, Matt J. Griffin & David J. Wise*

**Inhibition of Grass Carp Reovirus Infection by DNA Aptamers against S10 Protein (p. 89-94)**

*Hongru Liang, Xiaozhe Fu, Lihui Liu, Qiang Lin, Huizhi Guo, Yonggang Li, JiaXu Liu, Zhibin Huang & Ningqiu Li*

**Biofilm Formation on Aquaculture Substrates by Selected Bacterial Fish Pathogens (p. 95-104)**

*Wenlong Cai & Covadonga R. Arias*

**A Recombinant Viral Hemorrhagic Septicemia Virus Genotype IVb Glycoprotein Produced in Cabbage Looper Larvae *Trichoplusia ni* Elicits Antibody Response and Protection in Muskellunge (p. 104-111)**

*Isaac Standish & Mohamed Faisal*

**Antioxidant Responses, Neurotoxicity, and Metallothionein Gene Expression in Juvenile Korean Rockfish *Sebastes schlegelii* under Dietary Lead Exposure (p. 112-119)**

*Jun-Hwan Kim, Chul Woong Oh & Ju-Chan Kang*