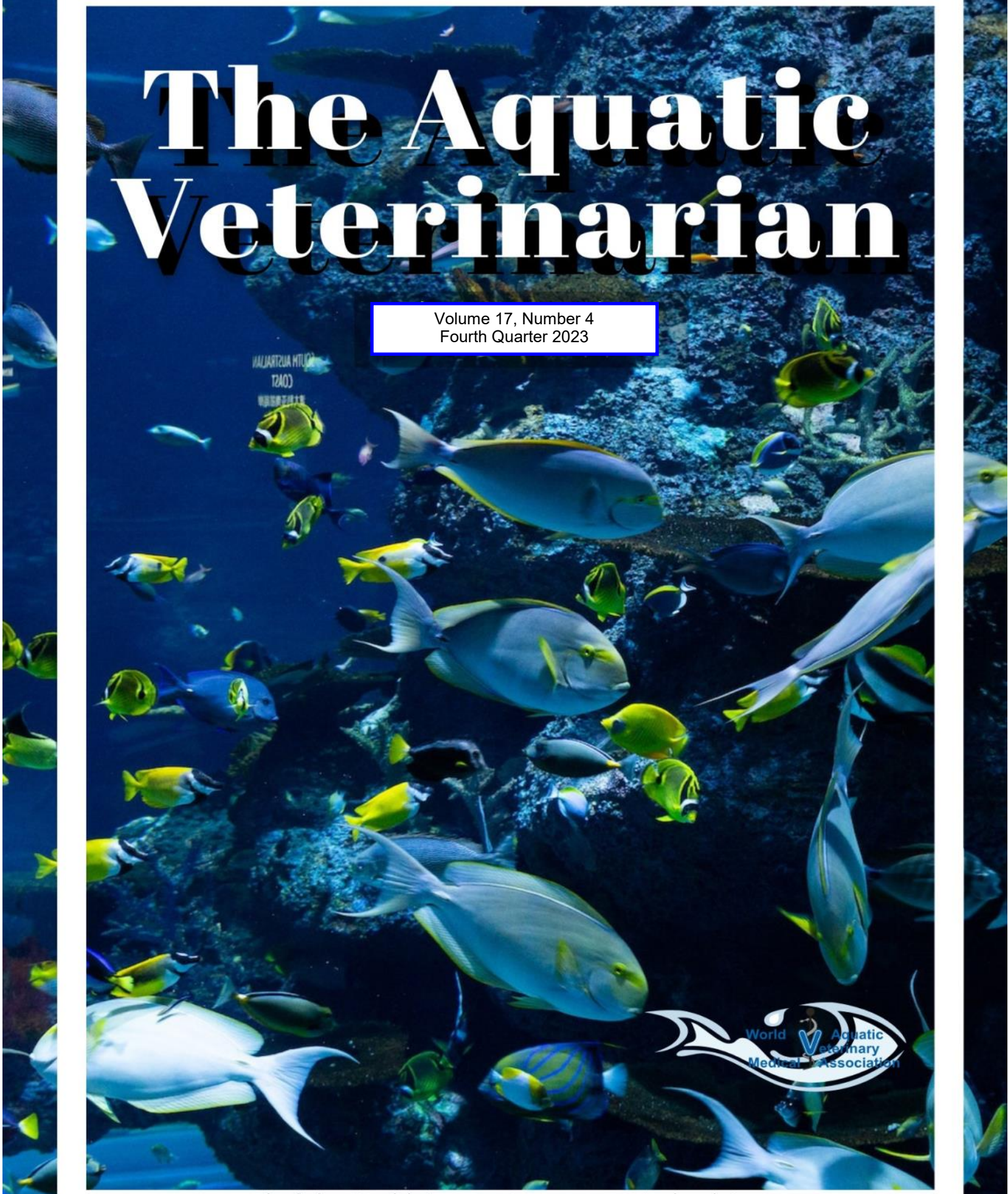
ISSN 2329-5562

The Aquatic Veterinarian

Volume 17, Number 4
Fourth Quarter 2023



Journal of the World Aquatic Veterinary Medical Association

WHO ARE WE

MISSION

The Mission of the Association is to serve the discipline of aquatic veterinary medicine in enhancing aquatic animal health and welfare, public health, and seafood safety in support of the veterinary profession, aquatic animal owners and industries, and other stakeholders.

To fulfill this Mission, the World Aquatic Veterinary Medical Association has established the following:

Objectives

1. To serve aquatic veterinary medicine practitioners of many disciplines and backgrounds by developing programs to support and sustain members, and the aquatic species industries that they serve.
2. To identify, foster and strengthen professional interactions among aquatic medical practitioners and other organizations around the world.
3. To be an advocate for, develop guidance on, and promote the advancement of the science, ethics, and professional aspects of aquatic animal medicine within the veterinary profession and a wider audience.
4. To optimally position and advance the discipline of aquatic veterinary medicine, and support the practice of aquatic veterinary medicine in all countries.

The ideas presented in this publication express the views and opinions of the authors, may not reflect the view of WAVMA, and should not be implied as WAVMA recommendations or endorsements unless explicitly stated.

Information related to the practice of veterinary medicine should only be used within an established valid Veterinarian-Patient-Client Relationship.

© 2023 World Aquatic Veterinary Medical Association

ISSN 2329-5562

Executive Editor
Nick Saint-Erne (USA) TAVeditor@wavma.org

WAVMA Executive Board
Bartolomeo Gorgoglione (USA)
President@wavma.org
President

Matthijs Metselaar (UK)
President-Elect

Gillian Taylor (South Africa)
Immediate Past President

Claudia Venegas (Chile)
Secretary@wavma.org
Secretary

Wes Baumgartner (USA)
Treasurer@wavma.org
Treasurer

Paola Barato (Latin America and Caribbean Director), Simon Doherty (Europe Director), Farah Gonul Aydin (Middle East Director), Nelly Isyagi (Africa Director), Stephen Pyecroft (Oceania Director), Jena Questen (North America Director), Win Surachetpong (Asia Director).
Regional Directors

Non-voting Advisors:
Laura Urdes (Romania)
Fellowship Advisory Council - Chair

Chris Walster (UK)
Administrators@WAVMA.org
Administrator

Past Presidents

Peter L. Merrill (USA)	2007
Ron Roberts (UK)	2008
Hugh Mitchell (USA)	2009
Fotini Athanassopoulou (Greece)	2010
Julius Tepper (USA)	2011
Dusan Palic (Germany)	2012
Mohamed Faisal (USA)	2013
Richmond Loh (Australia)	2014
Chris Walster (UK)	2015
Nick Saint-Erne (USA)	2016
Laura Urdes (Romania)	2017
David Scarfe (USA)	2018
Devon Dublin (Japan)	2019
Jena Questen (USA)	2020
Stephen Reichley (USA)	2021
Gillian Taylor (South Africa)	2022

Past Secretaries and Treasurers

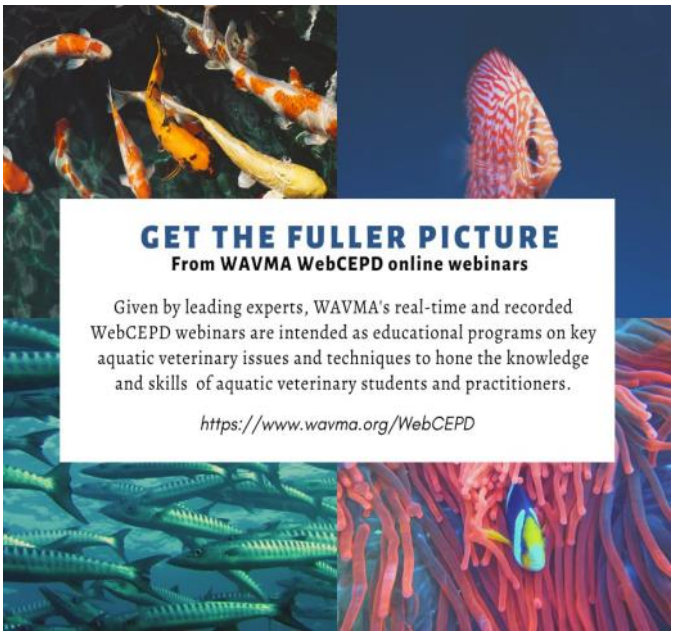
Chris Walster, Secretary	2006-2013
Devon Dublin, Secretary	2014-2017, 2022
Stephen Reichley, Secretary	2018-2019
David Scarfe, Treasurer	2006-2007, Secy. 2020
Dusan Palic, Treasurer	2007-2010
Nick Saint-Erne, Treasurer	2011-2014, 2018-2020
Sharon Tiberio, Treasurer	2015-2017

CONTENTS

Editorial 4
Editor's Note 4
Advertising Rates 4

Executive Reports 5-15
President's Report 5
Secretary's Report 6
President-Elect's Report 7
WAVMA Participation and Contribution to the EAFP XXI International Conference …8-10
Annual General Meeting Report 11
WAVMA 2024 Executive Board 12
Executive Board Responsibilities 13
WebCEPD Program.....13
Announcing the ABVP - Fish Specialty.....13
Website Report 14-15
WAVMA's Member Programs and Services ..15

Committee Reports 16-30
WAVMA Committees 7
Credentialing Committee 16
Certified Aquatic Veterinarians 16-17
Meetings Committee 18
Fellows Advisory Council 19
WAVMA Distinguished Fellows 19
WAVMA Student Chapters 20
Education and Student Committee 21
John L. Pitts Aquatic Education Award info ...21
Student Chapter Reports:
Bristol Veterinary School, UK 22
University of Calgary, Canada 22
Murdoch University, Australia 23
Onderstepoort Aquatics Club, Pretoria, South Africa 26-27
John L. Pitts Aquatic Education Award Reports:
Jamie Slater, DVM 24
Sienna McDonald 25



Colleague's Connection
Meet Dr. Gary Marty 28-29

Review Reports
Comparing the ABVP-Fish Practice and CertAqV: A history and list of requirements, by Satarah Jackson, DVM 30-32
The Museum of Aquarium & Pet History By Gary Bagnall 33-35

Literature Review
Book Review: *Pathology and Epidemiology of Aquatic Animal Diseases for Practitioners.* 36
Fundamentals of Aquatic Veterinary Medicine.. 37

Grand Rounds Case
Encysted Gill Trematodes 38

Aquatic Veterinary CE & PD 39-41
AQUAVET 2024 Information 39
WAVMA WebCEPD Program ..... 39 and 41

Index
The Aquatic Veterinarian 2023 Index 42-43
The Aquatic Veterinarian Comprehensive Index for selected topics 44-45

Sponsors
Just Exotic 10
WAVMA Shop 21
AquaDocs Podcasts 31
The Bug Company 38
ZooMed Laboratories 46

Cover by Giorgia Maria Gottifredi

"I am thrilled to have had the opportunity to work on the redesign of The Aquatic Veterinarian. As someone who is passionate about fish, I have dedicated the past two years of my career to aquaculture, where I have gained invaluable experience and knowledge. I am now eager to take the next step in my journey by pursuing a degree in fish pathology. I'm excited to be a member of the WAVMA among all of those who play such a critical role in promoting the health and wellbeing of aquatic animals!"

- Giorgia Maria Gottifredi

Discover core knowledge, skills & experience needed to become a WAVMA Certified Aquatic Veterinarian *(CertAqV)*

Did you know that WAVMA's ***CertAqV Program*** offers members the opportunity to become recognized and certified as having competency in 9 core areas deemed necessary to practice aquatic veterinary medicine? Find out more information online at: http://www.wavma.org/CertAqV-Pgm.

EDITORIAL

Editor's Note

With wishes for a joyous, peaceful, and safe year in 2024, I welcome you to the last issue of *The Aquatic Veterinarian* for the year 2023. It has been a good year, compared to the previous two years with the global COVID-19 pandemic. While it is still present, the virus is no longer keeping us restricted to our homes or preventing traveling. And traveling to veterinary conferences around the world is again possible. See the reports on our WAVMA representatives attending and lecturing at the EAFP XXI International Conference (pages 8-10), and the World Small Animal Veterinary Association Congress in Lisbon, Portugal (page 18), even though our Annual General Meeting was held virtually on December 5, 2023 (see page 11). Even our students are active and traveling again, with Student Chapter reports and Pitts Education Award reports on pages 22-27.

Congratulations to the new Executive Board members for 2024 (listed on page 12). We have a good team running WAVMA, and are always looking for more members to join committees. Our Administrator, Chris Walster, has provided information on how to use our WAVMA email listserv on pages 14-15. Using the Listserv is a great way to get answers to your aquatic case questions, some of which get highlighted in the Grand Rounds Cases (page 38).

Congratulations are also in order for the first group of veterinarians to pass the examination for the ABVP - Fish Practice specialty board certification. These veterinarians are now Diplomats and can advertise as "Fish Specialists." See page 13 for information on how to apply for Board Certification, and also there is an article about the process written by Dr. Satarah Jackson, on pages 30-32.

There is an interesting reprint article (pages 33 -35) about the new Museum of Aquarium and Pet History in California, which has the largest library of fish and pet books, and collection of antique pet supplies in the USA (possibly the world!). Finally, a new book published by the WAVMA team to complement the *Fundamentals of Aquatic Veterinary Medicine* textbook is just out this year, *Pathology and Epidemiology of Aquatic Animal Diseases for Practitioners* (pages 36-37). I wrote that review of this new book, and highly recommend it for aquatic veterinarians who see more species in their practice than just fish.

Until the next *TAV* issue in March of next year, hoping that you all have a blessed 2024!



Nick Saint-Erne, DVM, CertAqV
Executive Editor
TAVeditor@wavma.org

Download a QR reader onto your Smart Phone and scan the Quick Response Code to the right. It will take you to the WAVMA.org website page for accessing all of the past WAVMA Newsletters.

You will need your WAVMA User ID and Password to access the most recent issues of *The Aquatic Veterinarian.*

The latest editions are available for download at https://www.wavma.org/TAV-Current-Issues.

Past years' editions are available for download at https://www.wavma.org/TAV-Archives.

The Aquatic Veterinarian

The Quarterly Magazine of the World Aquatic Veterinary Medical Association

Consider promoting your products, services or programs to aquatic veterinarians, veterinary students, nurses & paraveterinary professionals throughout the world

Advertising Rates (per issue)

	Commercial	Non-Profit
Full page (~7" x 9")	$100	$50
1/2 page (~7" x 4.5") **or 1 column** (3.5" x 9")	$60	$30
1/4 page (~3.5 x 4.5")	$30	$15

WAVMA Members can place a free 1/8 page (business card size) advertisement in the TAV. Contact TAVeditor@wavma.org for information on advertising and payment options.

President's Report

On behalf of the WAVMA Executive Board, I wish all WAVMA members a great Christmas holiday season and a happy New Year!

This year has been an amazing one for the WAVMA activities! I'm proud to have served as WAVMA President in 2023! Our community is enriched by technicians who were awarded a certificate through the new CertAqVNT program, and by more CertAqV. We defined new strategic partnerships with national organizations that joined our community, including the Chilean Aquatic Veterinary Medical Association (MEVEA) and the Thai Aquatic Veterinary Medical Association (TAVA). We reinforced relationships with other partners, such as WAS, EAFP, and the ECAAH. We also strategically entered the FAO international platform on AMR (with Farah actively representing WAVMA). I'm proud to have established a new strategic partnership with the World Veterinary Education in Production Animal Health (WVEPAH) towards the establishment of a new "Professional Certificate in Animal Health: Aquaculture Production" (PCAHAP), starting in 2024.

In 2023 the very active WAVMA Education and Students Committee managed to deliver a WebCEPD each month, thanks to many kind contributors from around the world. These remains free to rewatch and to get CE credits for WAVMA members! Through our Education Resources programs we assigned awards to more students, thanks to the reinforced John L. Pitts Aquatic Veterinary Education Awards Program and Student Chapter Mini Grant. We officially welcomed two new Student Chapters, respectively in Calgary, Canada and Bristol, England.

Also, from this year we do have 3 new Director positions in the EB, getting very active Directors from around the world. We have a lot planned for 2024, including we are supporting a series of workshops though Central and South America, and continuing the above mentioned activities. We look forward to serving you and the aquatic medicine community in the year ahead!

Please support your community by renewing your WAVMA membership, and by becoming an active contributor of the WAVMA Committees. Everything you need to restart or renew your membership can be found on the WAVMA.org website.

Please consider making an end-of-year donation! We are kindly seeking donations to support our Education Resources programs. If you wish, please use the "Donate Now" green button on our Scholarships webpage, and select the amount and option more suitable for you. Please contact the WAVMA Treasurer for questions about other ways to contribute and how to get a certificate of donation, being WAVMA a non-profit (501(c)(6)) Professional Organization.



Wishing you all a great holiday season!

Bart Gorgoglione, DVM, MSc, PhD, CertAqV
WAVMA President
Assistant Professor
Fish Pathobiology & Immunology Laboratory
Dept. Pathobiology & Diagnostic Investigation (CVM)
Dept. Fisheries & Wildlife (CANR)
Michigan State University
President@wavma.org

Discover core knowledge, skills & experience needed to become a WAVMA Certified Aquatic Veterinarian *(CertAqV)*

Did you know that WAVMA's ***CertAqV Program*** offers members the opportunity to become recognized and certified as having competency in 9 core areas deemed necessary to practice aquatic veterinary medicine? Find out more information online at: http://www.wavma.org/CertAqV-Pgm.

EXECUTIVE REPORTS

Secretary's Report

Dear WAVMA Members,

The year 2023 has been a very dynamic year for WAVMA, with lots on in-person meetings with our EB members attending different events related to our profession and areas of expertise. Particularly, our Directors-at-large have demonstrated to be very proactive and committed, participating in meetings in North America, South America, Europe, and Asia representing WAVMA in those arenas. As WAVMA Secretary I'm proud of the commitment of my colleagues putting the name of WAVMA wherever they can attend.

This last quarter of the year has continued being very dynamic, having our EB members attending important meetings. In November, our President-Elect Dr Matt Metselaar and Director-at-large Europe, Dr Simon Doherty, spoke at a panel session at the London Vet Show on "Sustainable Aquaculture: Green Careers in the Blue Pasture." Furthermore, Dr Simon Doherty participated in the Workshop "One Aquaculture: One health & Sustainability- Principles Applied to Aquaculture."

Also, during November, on another scenario our Director-at-large Middle East, Dr Farah Gonul Aydin represented WAVMA at the Quadripartite FAO-UNEP-WHO-WOAH AMR Multi-Stakeholder Partnership Platform Inaugural Plenary Assembly in Rome and was elected as Vice-coordinator on behalf of Veterinary NGO´s Cluster 2. Proud on the participation of our Director-at-large Africa Dr Nelly Isyagi and Past-President Dr Gillian Taylor for successful activities during the WAS AFRAQ23 held in Zambia.

On the other side of the world our Directors-at large for Asia, Dr Win Surachetpong, and Oceania, Dr Stephen Pyecroft joined forces and attended the Fish Health Section of the Asian Fisheries Society Conference held in Bangkok in September, which WAVMA was happy to sponsor. Dr Devon Dublin, WAVMA President 2020 and Fellow member actively participated at the WSAVA Conference held in Lisboa during September as a member of WSAVA One Health Committee. Dr Dublin had an active participation as a speaker and moderator of sessions - WAVMA is moving and interacting!!

We must congratulate and welcome a new Student Chapter from University of Bristol, Veterinary School. We are happy to welcome you on board! WAVMA and the Education and Students Committee - Student Support Subcommittee are open to solve your questions and needs.

At this time of the year, WAVMA organizes its EB elections, the process was held from November 24 to December 4. Therefore, it is time to welcome the new EB Members: President-Elect Dr Nelly Isyagi from Uganda. Dr Isyagi has been an EB member since 2020 as a Director-at-large for Africa. Elected Treasurer Dr Wes Baumgardner, who has been WAVMA Treasurer since 2021. Elected Secretary Dr Claudia Venegas, who has been in the role since 2023. Dr Stephen Reichley was elected Director-at-large for North America. Dr Reichley served previously as WAVMA President 2021. Director-at large for Europe, welcome for second year Dr Simon Doherty. Director-at-large for Middle East, welcome again Dr Farah Gonul Aydin. Director-at-large for Latin America and the Caribbean welcome Dr Paola Barato on your second year in the role. Welcome Dr Stephen Pyecroft as Director-at large for Oceania, and Dr Win Surachetpong as Director-at-large for Asia, also in your second year. And we have a new member in the EB,Director-at-large for Africa, Dr Kunda Ndashe, welcome to the team. Wishing to the new WAVMA EB a successful 2024 and thanks for your commitment with our association.



As the year continued, we saw more members successfully completing the Aquatic Certification and Renewals, both for the Certificate of Aquatic Veterinarian (CertAqV) and for the Certificate of Aquatic Technician (CertAqVNT), enlarging the pool of colleagues and mentors/adjudicators to strengthen the program. I invite other members to apply, details can be found at https://www.wavma.org/CertAqV-Pgm and at https://www.wavma.org/CertAqVNT-Pgm

We continue to work to keep the WAVMA website updated, thanks to our Administrator Dr Chris Walster - with all the news and updates to WAVMA programs. We are also present in different social networks, so please have a look on our Facebook page and in our LinkedIn. These are great places to ask your aquatic questions, share stories or pictures and jobs, and talk to other colleagues involved in aquatic animal health. Don't hesitate to use our Members-L listserv! I also encourage you to submit articles dealing with Clinical Cases, and Book Reviews to The *Aquatic Veterinarian* or short news stories for the WAVMA e-News!

WAVMA needs your contribution and interaction to keep going with our motto: One Profession, One Discipline, One Voice – Cohesive and Inclusive!

Claudia Venegas, MV, PhD, CertAqV
WAVMA Secretary
Puerto Varas, Chile
Secretary@wavma.org

President-Elect's Report

Dear WAVMA Members,

I am absolutely thrilled to present you my vision for 2024, my presidency year, where our overarching theme for the year is "Professionalization." As we gather to discuss and explore advancements in our field, I'm excited to share some key developments that will shape WAVMA's trajectory in the coming year.

Foremost, we are proud to announce a substantial increase in our budget dedicated to the administrative team. This strategic investment allows us to enhance the support provided to the board, leading us to hire a second part-time administrative professional. Their role will be pivotal in ensuring the continued efficiency and progress of WAVMA.

Our unwavering commitment to stability and progress is further strengthened with the finalization of comprehensive guidance documents and a yearly calendar for the board. This strategic move aims to provide a solid foundation, fostering a more stable board environment for sustained growth. In line with our forward-thinking approach, our esteemed Fellows have embarked on formulating a strategic vision for the next decade. This comprehensive strategy will encompass both short-term and long-term goals, laying the groundwork for WAVMA's continued success.

Recognizing the importance of fiscal responsibility, we have prudently reduced our travel budget for 2024. We've allocated $500 for each meeting, encouraging collaboration with local members attending these events. This not only promotes WAVMA's activities but also ensures a mindful approach to our financial resources.

Expanding our horizons beyond borders, we are strengthening our existing relationships with organizations such as FVS, MEVA, AAFV, AVMA, and the Thai Vet Association. This strategic networking will empower us to increase our influence on the global stage. We aspire to adapt and adopt local policies, aligning them with global initiatives and implementing collaborative efforts with organizations like ECAAH, WVEPAH, EAFP, FAO, WOAH, WVA, WSAVA, IVSA, and EMA.

As we embark on these exhilarating endeavours, we remain dedicated to closely monitoring our return on investment (ROI). Our goal is to achieve a positive income in 2024, ensuring financial sustainability and success in all our undertakings.

I look forward to engaging in fruitful discussions, forging new connections, and collectively shaping the future of WAVMA. Together, let's continue to propel WAVMA forward as a dynamic force in the realm of aquatic veterinary medicine.

Matthijs Metselaar DVM PhD Dipl ECAAH CertAqV MIFM, MRCVS
WAVMA President for 2024
www.aquaticvets.com

WAVMA Committees

As a member-driven organization, WAVMA relies on volunteers to help implement programs useful for all members. Any WAVMA member can volunteer on a Committee to help shape the direction of the Association, meet new colleagues, forge valuable and lasting relationships, and help address key issues affecting aquatic veterinary medicine today. To find out more about serving on a Committee, please contact the Committee Chair or the WAVMA Secretary.

Communications Committee
This Committee manages the communications among members and others involved with aquatic veterinary medicine. It oversees the e-News, Facebook, Twitter, LinkedIn and other social media accounts.
Chair: Claudia Venegas, Secretary@wavma.org

Credentialing Committee
This Committee oversees and administers the CertAqV Program for credentialing aquatic veterinary practitioners, and evaluates aquatic veterinary educational programs useful to members.
Chair: Matthijs Metselaar CertAqV-Admin@wavma.org

Education & Students Committee
This Committee facilitates networking between student members and helps development of educational programs and services. It is composed of three subcommittees: WebCEPD, Education Resources, and Student Support.
Chair: Bartolomeo Gorgoglione, BartGorg@msu.edu

Meetings Committee
This Committee oversees and coordinates logistics for WAVMA-organized or sponsored aquatic veterinary educational meetings, including the Annual General Meeting.
Chair: Julius Tepper, cypcarpio@aol.com

Membership Committee
This Committee oversees membership issues to optimally serve members and the organization. It oversees the listservs and membership lists.
Chair: Chris Walster, Administrators@WAVMA.org

Publications Committee
This committee oversees the publication of WAVMA's quarterly journal, *The Aquatic Veterinarian*, and other occasional publications.
Chair: Nick Saint-Erne, TAVeditor@WAVMA.org

WAVMA Participation and Contribution to the EAFP XXI International Conference
By **Dr. Bartolomeo Gorgoglione**
WAVMA President
ESC Chair, Michigan State University, USA

Every two years the European Association of Fish Pathologists (EAFP) attracts scientists from all around the world to their International Conference on Diseases of Fish and Shellfish. Although, in 2021 the event was switched to the unpleasant online conference format due to the travel limitations imposed by the pandemic, making this year fortunate to return to meeting in person.

The 21st edition of this key meeting in the field of fish and shellfish health was held in Aberdeen, Scotland from 10th to 14th September 2023. Conference attendees gathered in the recently built P&J Live Aberdeen TECA, the Scotland's newest state-of-the-art events center, but with the cons to be inconveniently located in an industrial suburb rather than in the town. An exciting variety of talks was given by scientists from all continents (Fig.1), distributed across 25 sessions and 6 workshops, including 4 keynote speakers, and with 211 posters presented.



Fig. 1. Dr. Bartolomeo Gorgoglione reporting the discovery of Tetracapsuloides bryosalmonae in the North American Great Lakes during a session dedicated to myxozoan fish parasites.

Many WAVMA members participated in the conference, providing scientific contributions related to research advances in aquaculture, characterization of emerging pathogens, or antimicrobial resistance, among several other aquatics topics. Two WAVMA representatives traveled to Scotland with the support of the Executive Board, the President Dr. Bartolomeo Gorgoglione traveling from the USA, and the Director for Middle East, Dr. Farah Gonul Aydin traveling from Türkiye.

21st International Conference on Diseases of Fish and Shellfish
11 - 14 September 2023
Aberdeen, UK
European Association of Fish Pathologists

Taking advantage of this great networking opportunity, Dr. Gorgoglione secured a new partnership agreement with the Thai Aquatic Veterinary Medical Association (TAVA), fostered by the WAVMA Asia Director, Dr. Win Surachetpong, upon meeting in Aberdeen with the TAVA President Dr. Channarong Rodkhum (Fig.2). An MOU defining the terms of the collaboration was thereafter approved by the WAVMA EB and signed by the two presidents in October. Although further possibility for joint activities were also discussed with EAFP representative Dr. Snježana Zrnčić (Croatia), whom during the event became the new EAFP Vice President.



Fig. 2. Establishing a new partnership between WAVMA and TAVA representatives in Aberdeen, with Dr. Channarong Rodkhum (Thailand), Dr. Bartolomeo Gorgoglione (USA), and Dr. Win Surachetpong (Thailand).

The main WAVMA involvement in this event was the organization of a workshop focusing on Aquatic Veterinary Education, jointly promoted with the European College of Aquatic Animal Health (ECAAH), and kindly facilitated by the EAFP organizers. The session held during the conference featured 5 talks on 14th September in Aberdeen, crowding the room with over 100 attendees. Due to the dense conference schedule, a virtual discussion session was held in Zoom after one week. A technical report from this workshop is being published in the Bulletin of the EAFP.

The workshop was dedicated to the international efforts made by several associations towards the global development of a veterinary task force with expertise in a wide range of aquatic animals and special-

ties. The variety of WAVMA activities were illustrated by Dr. Gorgoglione through a talk entitled "Fostering international opportunities towards aquatic animal medical competence certification," focusing on the activities of the Education and Students Committee (ESC) and on the certifications for veterinarians and para-veterinarians (Fig. 3).



Fig. 3. Dr. Bartolomeo Gorgoglione promoting WAVMA activities during the Aquatic veterinary Education workshop at the EAFP XXI.

New approaches to deliver virtual continuing education opportunities were analyzed in a talk given by Dr. Farah Gonul Aydin, focused on the success achieved by the WAVMA WebCEPD program. Another important talk was given by Alexandre Beljean, DVM on behalf of the World Veterinary Education in Production Animal Health (WVEPAH). He officially announced the establishment of a new Professional Certificate in Animal Health: Aquaculture Production (PCAHAP).

This new certification will be achieved by veterinarians after attending a general module (year 1) followed by a specializing module (year 2) and upon final examination. This diploma is being designed through a new partnership recently established between WAVMA and WVEPAH, through an MOU signed in August by Dr. Gorgoglione and Dr. Pierre Cadot, the WVEPAH General Director, they also met in Aberdeen (Fig. 4). The PCAHAP diploma will be granted by the University of Montreal and validated by the World Organization for Animal Health (WOAH) and is expected to start in 2024.

During the EAFP XXI International Conference participants engaged in networking activities that will certainly be useful to establish new connections towards new scientific collaborations. On top of all scientific activities, the success of the meeting was also completed with a gala dinner (Fig. 5 and 6) held at the Beach Ballroom on the evening of Wednesday 13th September, with everybody enjoying the traditional Scottish Ceilidh dancing.



Fig. 4. Happy meeting with WAVMA and WVEPAH members of the PCAHAP Education Committee in Aberdeen, with Win Surachetpong (Thailand), Pierre Cadot (Luxemburg), Bartolomeo Gorgoglione (USA), Matthijs Metselaar (Scotland), and Alexandre Beljean, (France).



Fig. 5. EAFP XXI Gala Dinner at the Beach Ballroom, a historical preserved building from 1926 in Aberdeen.



Fig. 6. The EAFP President, Dr. Klaus Knopf (Germany), the EAFP Meeting Secretary and EAFP XXI organizer, Dr. Astrid S. Holzer (Austria), and the EAFP students and young researcher representatives, Dr. Thora Lieke (Germany) and Dr. Karolina Duk (Poland), conferring awards to students and young scientists during the Gala Dinner.

Continued on next page.

After the event, participants had the great chance to visit some of the wonderful natural and historical attractions either in The Granite City, across Aberdeenshire, or by traveling around Scotland (Fig. 7 to 9). Attending such a great event represented a unique opportunity to finally meet scientists from all over the world again. The next EAFP International Conference on Diseases of Fish and Shellfish will be held in Heraklion, Greece from 1st to 4th September 2025.



Fig. 7. Bartolomeo Gorgoglione and Farah Gonul Aydin, together with other conference delegates, spotting a local bagpiper playing for a traditional Scottish wedding held at the scenic Dunnottar Castle, Aberdeenshire.

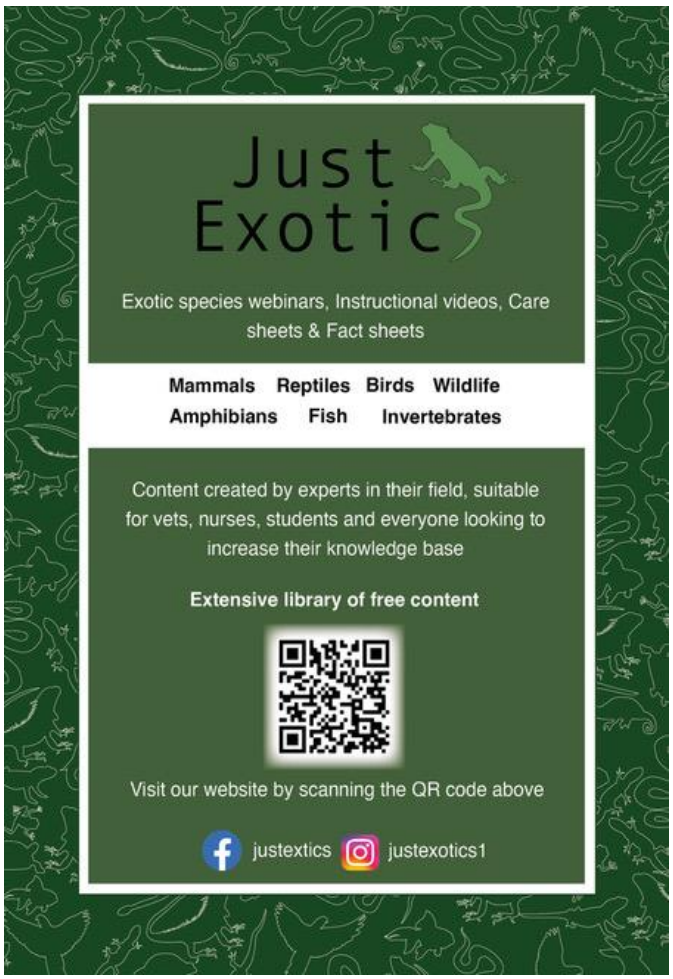


Fig. 8. Bartolomeo Gorgoglione and Win Surachetpong hiking towards the Falls of Cruachan in western Scotland.





Fig. 9. Dr. Bartolomeo Gorgoglione with his mentees from the Fish Pathobiology & Immunology Laboratory of Michigan State University, the PhD student Santosh Lamichhane, and the undergraduate student Monteserrat Bonfante visiting Footdee (locally pronounced Fittie) the historic fishing village located where the river Dee meets the North Sea in Aberdeen.



EXECUTIVE REPORTS

WAVMA Annual General Meeting Report
5th December 2023, 13:00 to 16:00 UTC

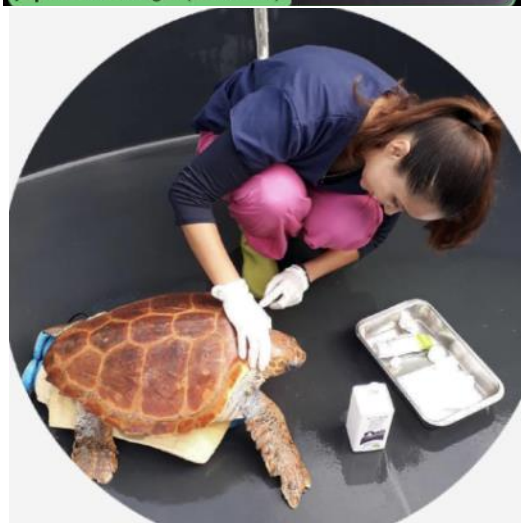
13:00 - 13:05 Welcome to participants by **Claudia Venegas**, WAVMA Secretary
13:05 - 13:30 WebCEPD – **Maribel Escobedo**, Mexico - Biomonitoring in Sea Turtle Populations
13:30 - 13:55 WebCEPD – **Dr. Hamish Rodger**, Ireland - Overview on the current main health and management issues in salmon aquaculture.

WAVMA 2023 Executive Board Reports
14:30 - 14:40 **Bartolomeo Gorgoglione**, United States, WAVMA President - Summary of WAVMA 2023 activities
14:40 - 14:45 **Gillian Taylor**, South Africa, WAVMA Past President - Progress to Date and Future Directions
14:45 - 14:50 **Wes Baumgartner**, United States, WAVMA Treasurer – Financial Update and 2024 Budget14:50 -
14:55 - WAVMA Fellows Committee and 2023 WAVMA Fellow Announcement, **Laura Urdes**, Romania

WAVMA 2023 Regional Directors Reports: perspectives from their regions
- 14:55 - 15:00 **Jena Questen**, United States, Director for North America
- 15:00 - 15:05 **Stephen Pyecroft**, Australia, Director for Oceania
- 15:05 - 15:10 **Win Surachetpong**, Thailand, Director for Asia
- 15:10 - 15:15 **Simon Doherty**, United Kingdom, Director for Europe
- 15:15 - 15:20 **Farah Gonul Aydin**, Turkey, Director for Middle East
- 15:20 - 15:25 **Nelly Isyagi**, Kenya, Director for Africa
- 15:25 - 15:30 **Paola Barato**, Colombia, Director for Latin America and Caribbean

15:30 – 15:35 Announcement of 2024 WAVMA Executive Board - **Christopher Walster**, UK, Administrator15:35
15:50 Virtual Town Hall - Questions and Answers led by EB members.
15:50 – 16:00 Conclusion: **Matthijs Metselaar**, United Kingdom, WAVMA President-Elect - Vision for 2024

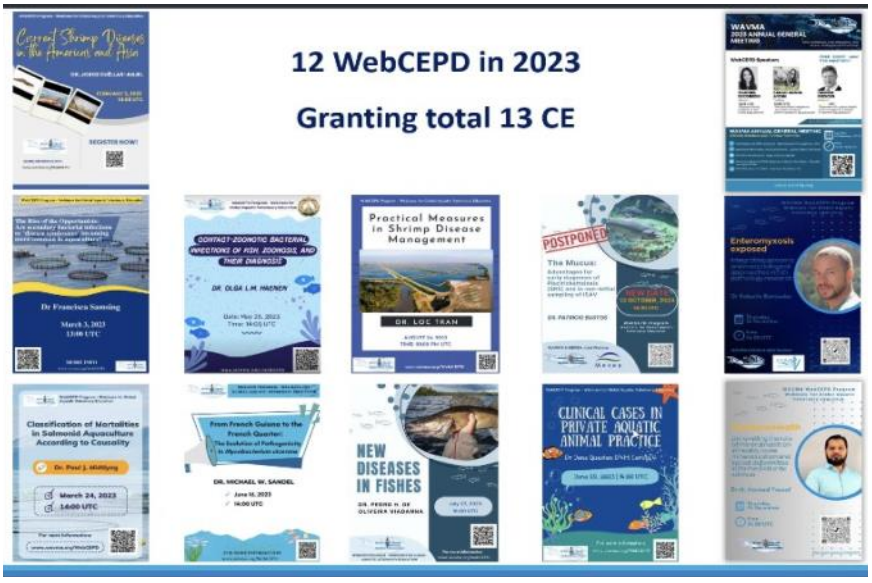




Left - Presenters: Hamish Rodger and Maribel Escobedo,

Right - Presidents for 2023 and 2024.








Matthijs Metselaar, UK
President 2024


Bart Gorgoglione, USA
Past President


Nelly Isyagi, Uganda
President Elect


Wes Baumgartner, USA
Treasurer


Claudia Venegas, Chile
Secretary


Stephen Reichley, USA
Director-at-large
North America


Stephen Pyecroft, Australia
Director-at-large
Oceania


Win Surachetpong, Thailand
Director-at-large
Asia


Simon Doherty, Ireland
Director-at-large
Europe


Farah Gonul Aydin, Turkey
Director-at-large
Middle East


Kunda Ndashe, Zambia
Director-at-large
Africa


Paola Barato, Colombia
Director-at-large
Latinamerica and Caribbean

www.wavma.org

EXECUTIVE REPORTS

Executive Board Responsibilities

The WAVMA Executive Board consists of the President, Immediate-Past President, President-Elect, Secretary, Treasurer and Directors. The Executive Board will provide oversight and approve all fiscal and administrative activities of WAVMA and its committees, programs and services in accord with the Bylaws, and facilitates the development and implementation of WAVMA programs.

The President will: Schedule, draft agendas and preside over the Executive Board meetings; Monitor and facilitate implementation of all active WAVMA and Committee programs, services and other initiatives; serve on the Budget Committee; Provide an update of WAVMA activities for the association's quarterly publication; Work with the Meetings Committee to finalize and implement the WAVMA Annual General Meeting; Preside over the WAVMA Annual General Meeting.

The President-Elect will: Assume the President's responsibilities in the absence of the President; Serve as a member of the Budget Committee; Identify at least one new WAVMA program or initiative to implement during his/her 3-year tenure; Assist in facilitating and implementing active WAVMA programs and initiatives during his/her 3- year tenure;

The Immediate Past-President will: Assume the President's responsibilities in the absence of the President and President-Elect; Assist the President-Elect and other Board members in developing or implementing new or existing WAVMA initiatives and programs.

The Secretary will: Serve as the primary WAVMA point of contact for the public; Inform members of WAVMA programs & initiatives; Assist the developments and distribution of WAVMA official correspondence; Serve as Chair of the Communications Committee;

The Treasurer will: Maintain all WAVMA bank accounts and bookkeeping, receive all payments, and pay all approved expenses; Chair the Budget Committee and facilitate the development of an annual budget

Directors will: Represent individual WAVMA member's general interests in their geographical regions.



WebCEPD Program

Since 2013, WAVMA has produced over 172 Webinars that are available to watch on our website: https://www.wavma.org/WebCEPD, including conference recordings on the Video page: https://www.wavma.org/video-library),

You may be able to use these for continuing education credit for veterinary licensing, and you will also sure learn a lot!

Lectures are given by leading experts, and WAVMA's WebCEPD webinars are intended as educational programs on a variety of aquatic health issues and veterinary techniques to hone the knowledge and skills of aquatic veterinarians and veterinary students. To earn Continuing Education and Professional Development (CEPD) credit, you will need to complete a short Knowledge and Skills Assessment (KSA) to ensure you have met the learning objectives. On successful completion, you will receive a CEPD Certificate, which may be useful for licensure/registration to practice veterinary medicine and to earn credit towards becoming a WAVMA Certified Aquatic Veterinarian.



WEBSITE REPORT

WAVMA Listservs

WAVMA offers three electronic methods of communication which are sent to the primary registered email address you provided to WAVMA:

1. E-news which all members/subscribers automatically join. This is sent out periodically and members/subscribers are advised to keep the subscription to this (e.g., do not untick). If you do not wish to subscribe, as with any newsletter, you can unsubscribe from either the options at the bottom of any newsletter sent, or by unticking this box in the Preferences Tab.
2. Members-L (WAVMA_Members-L@wavma.org) is open to all members and is where you can ask a question of colleagues or where WAVMA information on member services is posted. You can also subscribe to a weekly digest if preferred, but do not have both options ticked – it will not work.
3. Student-L (WAVMA_Student-L@wavma.org) is open to all members and aimed at being a list that discusses student focused issues.

Listservs are "old hat" technology and the big IT providers would probably prefer WAVMA used something like WhatsApp, Facetime or Discord, etc. as the messaging technologies. New or old technologies have their own set of issues. Overall, the listservs seem to work best for WAVMA (including the committee listservs) but that does not mean they are problem free. You are automatically removed from the list if emails from the listserv keep "bouncing" back, this is to prevent @wavma.org from being seen as a generator of spam. Admin is usually, but not always, sent an automatic message saying someone has been removed. Admin will try contacting you on your registered address and/or your secondary email address if available. However, this is often not successful at alerting you, as the emails are frequently returned as undeliverable, for whatever reason, which is very frustrating.

Below are the four most common issues with the listservs, the reasons why the email may "bounce" and what you can do about them.

1. You no longer have access to your registered WAVMA email address. Where possible you should add a secondary email address to your WAVMA profile. This allows WAVMA to communicate with you should there be a problem with the primary address. Most commonly issues arise when members no longer have access to the primary email (e.g., changed jobs/graduated). If you no longer have access to the primary email and have forgotten your password, and cannot log in to update your details, please contact WAVMA Administrators at administrators@wavma.org to request an email address update. Admin will ask for some sort of unique information from your WAVMA profile to confirm you are who you say you are. To speed up the process please include in the request something that only you (and Admin) would know from your WAVMA profile if possible.
2. @wavma.org is seen as spam by your email provider. Email providers constantly battle spammers and change the "rules". This can mean that an address previously seen as safe suddenly becomes spam, until the listserv provider catches up with the new rules. But that might be too late to stop you being removed from the list. To help avoid this, please ensure that the WAVMA address is added to your safe senders list. This can be different between online and offline Apps, so please ensure it is added to both. It is also worth checking your safe senders list monthly. If the rules change, some email providers will want you to update your safe senders list (without telling you) and ignore what you've previously said is safe.

If you have been removed from the listserv, go to your Preferences Tab and re-tick the box for the listserv and click Save. If the issue keeps recurring, then please use a different email address as your primary contact. This will benefit you and WAVMA.

3. Issues between WAVMA Servers and Listserv Servers. The listserv is run on the basis you are a current WAVMA member, and you've ticked the appropriate boxes in your Preferences Tab. Sometimes the two servers do not talk nicely to each other, and synchronicity is lost. You look in your Preferences tab and you are subscribed to the list but receive nothing. If this is the case, go to your Preferences Tab and untick the listserv box, click Save. Give it a couple of seconds to synchronise, and then re-tick and Save. This will sort the problem.
4. Using an employer email or bespoke email system. These may have their own rules as to what is considered spam (most commonly a single email that is sent out to multiple individuals as is the case with any listserv) and this issue can also extend to major providers such as gmail (for reasons unknown). For WAVMA (and you) this is the most problematic as when investigated both sides blame each other which is not helpful.

If you use an employer email or bespoke system, it is worth asking the provider or your IT Department if the system will accept delivery of emails from a listserv. If the answer is no, then please use another email address. If yes, but you have not received any listserv email or suspect you've been removed, then ask them to check their server settings are correct and allow listserv emails through. Although unlikely, it does occasionally happen.

Listservs are a great way to communicate to large numbers of members but for a small minority (and WAVMA Admin) can be problematic. Considering the above four issues will ensure you get full access to the listservs without any difficulties and will decrease the amount of time Admin spends resolving problems. In eighteen years of running listservs, Admin is only aware of two individuals where the above did not resolve their issues, and once when the problem lay with the WAVMA Listserv provider, which was quickly spotted via the "administrative systems" and resolved.

WEBSITE REPORT

One thing to remember is please "sign" the email, as otherwise no one knows who it is from. Providing a "signature" allows the option of people responding to you privately.

On a different subject, the webpages for the CertAqV Program (www.wavma.org/CertAqV-Pgm) and the CertAqVNT Program (www.wavma.org/CertAqVNT-Pgm) have recently been updated. There are considerably more resources now available including a download explaining how to use the automated certificate system.

For those involved in either certificate as candidates, mentors or adjudicators I would recommend having a look and updating yourself on the process and resources.

I hope you all had a great Christmas and wish you all a Happy New Year.

Chris Walster BVMS MVPH CertAqV MRCVS
WAVMA Administrative Coordinator

TO SUPPORT FUTURE STUDENT SCHOLARSHIPS, PLEASE MAKE A DONATION TODAY TO THE SCHOLARSHIP FUND! WWW.WAVMA.ORG/SCHOLARSHIPS.



WAVMA's Member Programs and Services

Find a Fish Vet Directory - a directory for the public to find aquatic veterinarians

Member Directory - a members-only tool to locate other members and for vet students to locate mentors

The Aquatic Veterinarian - a quarterly publication with news, peer-reviewed contributions, clinical cases, jobs, meetings and more

Certified Aquatic Veterinarian (CertAqV) Program - a program identifying and certifying veterinarians with competency in core subject matter necessary for practicing aquatic veterinary medicine

WebCEPD Program - live and recorded webinars, courses, and presentations;; many are available for CEPD credit

John L. Pitts Aquatic Veterinary Education Awards Program - an international program that provides financial support for veterinary students and new graduates to increase their experience in aquatic veterinary medicine

Employment Opportunities - a list of available aquatic veterinary jobs, available to members only

Image Library - a collection of images useful for presentations, diagnostic interpretations, and more

Video Library - a collection of videos to help members and others understand aquatic veterinary techniques and issues

WAVMA Student Chapters - WAVMA chapters formed by veterinary students and faculty mentors at veterinary schools and colleges around the world

Members-L - (WAVMA_Members-L@.wavma.org). A members-only listserv for discussions on any topic of interest. To post to it, you must be a current member and ticked the appropriate box in your Member Profile Preferences tab.

Students-L - (WAVMA_Student-L@wavma.org). A discussion listserv for WAVMA student members. you must be a current member and ticked the approrpiate box in your Member Profile Preferences tab.

Leadership Roles - All members (including students) have the opportunity, and are encouraged, to serve on any WAVMA Committee. All full members may also be nominated for a position on the Executive Board. If you are interested in more information, please contact the WAVMA President.

COMMITTEE REPORTS

Credentialing Committee

The WAVMA Aquatic Veterinarian Certification Program identifies the core competency or subject matter areas needed to practice aquatic veterinary medicine, and recognizes those veterinarians who have acquired the necessary knowledge, skills and experience (KSE) from a variety of sources, in the following 9 core subject matter areas:

- Aquatic Environment and Life Support Systems
- Taxonomy, Anatomy and Physiology
- Husbandry and Industries
- Pathobiology and Epidemiology of Aquatic Animal Diseases
- Diagnostics and Treatment of Aquatic Animal Diseases
- Clinical Veterinary Experience and Client Communications
- Public Health, Zoonosis and Seafood Safety
- Legislation, Regulations, and Policies
- Principles of Aquatic Animal Welfare

The Process

It is recommended that you initially speak with a mentor prior to applying, this is to ensure that you can complete the CertAqV process within the 12 months allowed. You can identify a mentor by going to the WAVMA Member Directory and click on the green CertAqV box at the bottom of the page. This will bring up a list of all potential mentors. Alternatively, you can email: administrators@wavma.org who will talk you through the process prior to you applying.

For CertAqV Program Description *Click here* to download, or go to WAVMA.org/CertAqV-Pgm.

Individuals who desire to participate in the WAVMA CertAqV Credentialing Program will first need to register and pay the US $250 administrative fee. When registering you will select a mentor to assist and guide you through the requirements. After you have registered, you will receive an e-mail on how to download a document to record where you have obtained sufficient KSEs (knowledge, skills and experience/education) in each of the 9 modules or subject areas. You have one year to complete these, once registered.

When your mentor is satisfied you have sufficient KSE credits, he/she will then request the WAVMA Credentialing Committee to evaluate these. Once the Committee and the WAVMA Executive Board have evaluated these and are satisfied you meet all requirements, you will be notified and mailed a certificate suitable for framing and display.

If you have questions about the Certification process, please send me an email.

Dr. Matthijs Metselaar DVM PhD CertAqV MRCVS
Credentialing Committee Chair
CertAqV-Admin@wavma.org

Certified Aquatic Veterinarians

Ali Anwar Ahmad	Singapore
Jessica Allen	USA
Sara Alves	USA
Chelsea Anderson	USA
June Ang	Singapore
Nimrod Arad	USA
Brenda Arras	USA
Farah Gonul Aydin	Turkey
Romualdo Balagapo	Philippines
Sarah Balik	USA
Marcello Balzaratti	Italy
Jo Bannister	Australia
Madison Barnes	St. Kitts & Nevis
Michelle Barnett	USA
Christa Barrett	USA
Heather Barron	USA
Giana Bastos-Gomes	Hong Kong
Julia Bauer	Germany
Mariah Beck	USA
Trista Becker	USA
Jenice Bell	USA
Heather Bjornebo	USA
James Bogan	USA
Pierre-Marie Boitard	France
Serena Brenner	USA
Erika Brigante	St. Kitts & Nevis
Tessa Brown	USA
Faith Burgos	USA
Shraddha Cantara	United States
Christian Capobianco	United States
Todd Cecil	USA
Ri Chang	United States
Bryony Chetwynd-Glover	UK
Prakan Chiarahkhongman	Thailand
Dana Clark	USA
Annie Clift	USA
Dondrae Coble	USA
Michael Corcoran	USA
Emily Cornwell	USA
Galaxia Cortes-Hinojosa	Chile
David Craton	United States
Rebecca Crawford	St. Kitts & Nevis
Rubén López Crespo	Mexico
Charles Cummings	USA
Nadav Davidovich	Israel
Manuel De la Riva Fraga	Spain
Darren Docherty	UK
Simon Doherty	UK
Christina Dover	USA
Devon Dublin	Japan
Freeland Dunker	USA
Michael Dutton	USA
Jacqueline Elliott	USA
Ashley Emanuele	USA
Azureen Erdman	USA
Maribel Escobedo	Mexico
Antonella Fabrissin	Italy
Mohamed Faisal	USA
Erika First	USA
Lindsay Francis	USA
Ari Fustukjian	USA
Cherissa Garcia	United Arab Emirates
Erika Gibson	USA
Danielle Godard	USA
Christopher Good	USA
Bartolomeo Gorgoglione	USA
Krystan Grant	USA
John Griffioen	USA
Miguel Grilo	Portugal
Stephanie Grimmett	UK
Katharina Hagen-Frei	Switzerland
Alex Hall	USA
Katharine Haussman	USA

COMMITTEE REPORTS

Orachun Hayakijkosol	Australia
Eileen Henderson	USA
Jenny Herbert	United States
Chelsea Hester	USA
Nora Hickey	USA
Karlee Hirakis	Australia
Kelsey Hoag	USA
Emma Houck	USA
John Howe	USA
Aivee Huynh	Australia
Kerryn Illes	New Zealand
Adrien Izquierdo	USA
Leslie Jarrell	USA
Ericka Johnson	United States
Jimmy Johnson	USA
Kelsey Johnson	USA
Sharmie Johnson	USA
Kasper Jorgensen	Denmark
Brian Joseph	Canada
Hali Jungers	USA
Parinda Kamchum	Thailand
Kyle Kansman	USA
Fritz Karbe	Germany
Sherri Kasper	USA
Elizabeth Kaufman	Israel
Denyse Khor	Singapore
Amy Kizer	USA
Jessica Koppien-Fox	USA
Jack Kottwitz	USA
Laura Krogman	USA
Lana Krol	USA
Marie Kubiak	UK
Diya Lake	Mauritius
Lucinda (Wing Sze) Lam	Australia
Krista Ann Lee	USA
Veronica LePage	Canada
Elizabeth Leuchte Rising	USA
Sarah Lietzke	USA
Jan Linkenhoker	USA
Eric Littman	USA
Richard Lloyd	UK
Salina Locke	United States
Richmond Loh	Australia
Alfonso Lopez	Singapore
Ruben Arturo Lopez Crespo	Mexico
Jordi Lopez Ramon	Spain
Amber Lum	USA
Adolf Maas	USA
Raphael Malbrue	USA
Paul Manensis	Canada
David Marancik	Grenada
Victoria Maroun	USA
Laura Martinelli	USA
Robert Martinez	USA
Alexandra Mason	USA
Colin McDermott	USA
Alicia McLaughlin	USA
Celia Megdal	USA
Larissa Menke	USA
Matthijs Metselaar	UK
Sonja Miles	UK
Tim Miller-Morgan	USA
David Minich	United States
Haitham Mohammed	Egypt
Alissa Mones	USA
Danny Morick	Israel
Charlene Morotti	USA
Katrina Murray	United States
Kunda Ndashe	Zambia
Lucie Nedved	Australia
Ross Neethling	UK
Jenifer Nix	USA
Sally Nofs	USA
Ladislav Novotny	Czech

Massimo Orioles	Italy
Alec Ortiz Colosi	USA
Courtney Pace	United States
Dušan Palić	Germany
Brian Palmeiro	USA
Veronica Pardini	USA
Christine Parker-Graham	USA
Lily Parkinson	USA
Chris Payne	USA
Melanie Peel	USA
Ayanna Phillips	Trinidad & Tobago
Maximilian Polyak	United States
Ashley Powell	USA
Jena Questen	USA
Eva Quijano Cardé	USA
Janis Raines	USA
Atisara Rangsichol	Thailand
Zachary Ready	USA
Aimee Reed	USA
Stephen Reichley	USA
Nuno Ribeiro	Portugal
Julianne Richard	USA
Camille Richie	USA
Michelle Rivard	USA
Rifky Rizkiantino	Indonesia
Patinan Rookkachard	United Arab Emirates
Justin Rosenberg	United States
Komsin Sahatrakul	Singapore
Nick Saint-Erne	USA
Sonja Saksida	Canada
Jessie Sanders	USA
Sasha Saugh	South Africa
David Scarfe	USA
Neha Shah	India
Khalid Shahin	UK
Galit Sharon	Israel
John Shelley	USA
Chris Shirkey	USA
Constance Silbernagel	USA
Melissa Singletary	USA
Esteban Soto	USA
Brandon Spolander	South Africa
Elizabeth St. Germaine	USA
Brittany Stevens	USA
Chairat Sumgorthong	Thailand
Win Surachetpong	Thailand
Tanatporn Tantiveerakul	Thailand
Gillian Taylor	South Africa
Alissa Tepedino	USA
Julius Tepper	USA
Sharon Tiberio	USA
Miranda Torkelson	USA
Norrapat Towanabut	Thailand
Alexandra Troiano	USA
Laura Urdes	Romania
Julian Vaillard Cerdio	Mexico
Greta Van de Sompel	Belgium
Claudia Venegas	Chile
Jelena Vukcevic	Australia
Zachary Waddington	Canada
Sarah Wahltinez	USA
Chris Walster	UK
Scott Weber	USA
Marcus Webster	USA
Trista Welsh	USA
Michael Wenninger	USA
Peter Werkman*	Holland
Laura Whalen	USA
David Wilbur	USA
Sarah Wilson	USA
Howard Wong	Hong Kong
Sarah Wright	USA
Taylor Yaw	USA
Irene Yen	USA

COMMITTEE REPORTS

Meetings Committee

The meetings schedule for 2023 finished this fall, with the World Small Animal Veterinary Association Congress in Lisbon, Portugal from September 27-29, 2023. As a co-sponsor of this annual event, WAVMA had a dedicated schedule of aquatic talks presented by a team of three WAVMA speakers: Estaban Soto Martinez, Eva Lewisch and Dusan Palic.

After the meeting, I asked the speakers for their thoughts on the experience and the value for organized aquatic medicine. Here are their responses:

Estaban: "The conference went great. It was a pretty fast trip, but I think of great value. As you know, this is one of the largest veterinary meetings, and although it only focused on companion animals, there was good discussion on one health and zoonotic diseases as well. Our session was well attended (in comparison to what I have seen in AVMA convention sessions) with veterinarians interested in expanding their practice, and with students interested in learning about fish medicine. I think the topics and presenters were diverse and added different points of view to the discussions. There was lots of interest in discussing training opportunities and new certifications (including the joint effort between AAFV and WAVMA for Board Certification). All together, I do think it is of great value to continue with this collaboration and I do appreciate WAVMA selecting me as one of the speakers for this meeting."



This is what Eva thought: "The fish session was attended by approximately 60 persons, maybe 70-80 in the two later sessions. The fewer attendees in the morning might have been a consequence of first day arrivals. I had the impression that about half of the attendees were already in the fish-vet-business, while the other half were more in the beginning stage, but definitely eager to include fish in their practice. Questions to the presenters and further personal conversations confirmed their interest in the subject.

Including aquatic animal medicine in a small animal veterinary congress like WSAVA is a strong and important signal. To my surprise, there were almost no exotic pet presentations, giving the fish section even more significance. It was my observation that advertising WAVMA as an organization could have been more obvious. I have no background on the organization of the cooperation between WSAVA and WAVMA, but WAVMA was not mentioned at the opening ceremony."



These were Dusan's thoughts: "All in all good attendance when I was moderating (about 30 people in the morning sessions) and (not to toot my horn, but…) the room was almost full (~60-70 attendants) in the afternoon."



Julius M. Tepper, DVM, CertAqV
Meetings Committee Chair



COMMITTEE REPORTS

Fellows Advisory Council Annual Report

A WAVMA Fellow is someone who has conferred on them the honorific: *WAVMA Distinguished Fellow*. The Fellows Advisory Council is composed of WAVMA Distinguished Fellows who are current WAVMA members and who wish to contribute to the development of WAVMA. The Chair of the Fellows Committee will be the Fellows Representative to the Executive Board. Amongst the topics discussed this year by the Fellows were:

Fellow of the Year 2023

This year, the honorary title was awarded to Dr. Stephen Reichley, a passionate aquatic veterinarian, who joined WAVMA as a student, and has supported WAVMA's development through being a member of several committees, culminating in him being Secretary, and then WAVMA President in 2021.

WAVMA Distinguished Fellows are:

Peter Merrill (2012)
Ronald Roberts (2012)
David Scarfe (2012)
Julius Tepper (2012)
Christopher Walster (2012)
Grace Karreman (2013)
Marian McLoughlin (2013)
Dusan Palic (2013)
Mohamed Faisal (2016)
Nicholas Saint-Erne (2017)
Richmond Loh (2018)
Laura Urdes (2019)
Devon Dublin (2020)
Gregory Lewbart (2021)
Matt Metselaar (2022)
Stephen Reichley (2023)

Fellows to support the WAVMA President in developing a longer term Strategy for WAVMA

The idea of developing a longer term strategy for WAVMA started last year, and the Fellows proposed even a plan to develop this strategy. A Strategic Plan is necessary for outlining and refining WAVMA's purpose and goals (vision, mission, objectives and values), and how the organization plans to meet these goals to achieve success. The goal of developing a strategic plan is to ensure everyone in the organization is aligned to the vision, mission, objectives and values by creating a formal strategic plan document. Once adopted by the Executive Board, a strategic plan will help the WAVMA Board, Committees, members and the general public to better understand the organization, how it will operate, and what might be implemented in the next 3, 5 and 10 years.

More specifically, the aim of this initial meeting is to:

- Determine if the current WAVMA Mission and Objectives (https://www.wavma.org/about-WAVMA) are adequate or need to be updated, and develop WAVMA "Vision" and "Values" statements.
- Determine how well current WAVMA programs and activities are running, and identify new programs and activities that may support the WAVMA Vision, Mission, Objectives and Vision.
- Evaluate each program and activity using a SWOT analysis, and determining the personnel and financial resources needed.
- Develop a draft outline or "road map" for implementing prioritized WAVMA programs and activities that will optimally fulfil WAVMA's Vision, Mission, Objectives and Vision.

Revision of WAVMA by laws

The revision will follow the Policy and Procedure Manual, and will be prompted by the WAVMA President and the Executive Board.

Other Projects

- Increasing members (incl. discounted membership to encourage inclusion of more members)
- Assisting WAVMA Publications and the Communications Committees
- Increasing WAVMA incomes
- A regular plan for the website updating
- Updating the elections system (re-thinking and re-designing).

The Fellows Nomination Subcommittee (FNS) is a subcommittee of FC and evaluates applications for the WAVMA Distinguished Fellow and forwards a recommendation for a WAVMA Distinguished Fellow to the EB. The 2023 Distinguished Fellow was announced at the online Annual General Meeting the first week of December 2023.

Laura Urdes, PhD DVM CertAqV
Fellows Advisory Council Chair

The Aquatic Veterinarian is meant to be read as a 2-page spread (like a paper magazine!). To view it this way on your computer, open the pdf document using Adobe Acrobat or Adobe Reader, then go to the menu bar at the top of the computer screen and click on View, then Page Display, then Two Page View. Adjust the size on your screen so you can see both pages side by side.

Make sure that the first page is viewed by itself. That will allow you to scroll through the issue seeing the cover page by itself first, followed by two pages side by side for the rest of the issue.

STUDENT COMMITTEE

WAVMA Student Chapter Guidelines

To initiate a new Student Chapter, download the *WAVMA Student Chapter Guidelines*
A Spanish version of the Student Chapter Guidelines can be *downloaded from the WAVMA website.*

Examples of available Student Chapters programs:

- Assistance in organizing and promoting Chapter programs and activities.
- MiniGrants of up to $500 USD are available to assist official WAVMA Student Chapters with conducting activities intended to engage students in opportunities related to aquatic veterinary medicine. Download the Flyer here and the application form here.
- Access to recorded webinars and live web-based presentations from experts around the world.
- Low annual WAVMA Student Membership ($25)
- 50% Chapter member's dues may be available to support Chapter-organized activities. Get more information here and a Spanish version here.
- Reduced rate (50% off) WAVMA Full Membership the year after graduation.
- John L. Pitts Aquatic Veterinary Education Awards Program
- Access to the latest editions of WAVMA's quarterly journal, *The Aquatic Veterinarian*.
- Access to WAVMA member-only webpages.
- Aquatic veterinary externship and job listings.
- Participation in the WAVMA Certified Aquatic Veterinarian (CertAqV) Program.
- Access to WAVMA e-mail listservs, including Members-L, and Student-L.

A list of all current WAVMA Student Chapters is available on the website:
https://www.wavma.org/WAVMA-Student-Chapters

Consider joining the ***WAVMA Chapter Facebook Group*** to find out what's happening in other Chapters.



WAVMA Student Chapters

University of Pretoria, Onderstepoort Faculty of Veterinary Science, South Africa (established 2017)

Murdoch University, School of Veterinary & Life Sciences, Australia (established 2014)

University of Sydney, School of Veterinary Science, Australia (established 2014)

Auburn University, College of Veterinary Medicine, USA (established 2013)

Colorado State University, College of Veterinary Medicine & Biomedical Sciences, USA (est. 2019)

Cornell University, College of Veterinary Medicine, USA (established 2019)

Michigan State University, College of veterinary Medicine, USA (established 2021)

Mississippi State University, College of Veterinary Medicine, USA (established 2014)

The Ohio State University, College of Veterinary Medicine, USA (established 2018)

Oregon State University, College of Veterinary Medicine, USA (established 2017)

Ross University, School of Veterinary Medicine, St. Kitts & Nevis, West Indies (established 2015)

St. George's University, School of Veterinary Medicine, Granada, West Indies (established 2018)

Tuskegee University, School of Veterinary Medicine, USA (established 2012)

University of California, Davis School of Veterinary Medicine, (Established 2020)

University of Georgia, College of Veterinary Medicine, USA (established 2015)

University of Illinois, College of Veterinary Medicine, USA (established 2018)

University of Pennsylvania, School of Veterinary Medicine, USA (established 2020)

Western University of Health Sciences, College of Veterinary Medicine, USA (established 2014)

University of Edinburgh, Royal (Dick) School of Veterinary Studies, Scotland UK (established 2020)

University of London, Royal Veterinary College, England UK (established 2021)

Ankara University, Faculty of Veterinary Medicine, Turkey (established 2022)

Makerere University College of Veterinary Medicine Animal Resources and Biosecurity (established 2022)

St. Matthew's University School of Veterinary Medicine West Bay, Cayman Islands (established 2022)

University of Bristol, Bristol Veterinary School, England (established 2023)

University of Calgary, Canada (established 2023)

Education and Student Committee

We are reaching out to individuals and organizations to share our commitment in offering support to veterinary students and young veterinarians to explore career opportunities with aquatics' health.

WAVMA is dedicated to providing continuing education opportunities through the successful WebCEPD series of webinars, covering a wide range of topics and remaining accessible through the WAVMA website. We do provide the only worldwide certification to Aquatic Veterinarians (CertAqV) and to Veterinary Nurse and Technicians (CertVNT).

We encourage students and veterinarians to learn more about any aquatic species, when still at their vet schools or after graduating. In this direction we do have many Student Chapters established in universities around the world. WAVMA ESC manages two small fellowship opportunities for veterinary students and for young veterinarians, both assigned upon application and review process:

1. The John L. Pitts Aquatic Veterinary Education Awards Program is open to individuals who want to have a hands on experience with aquatic species.
2. The recently established WAVMA Student Chapter Mini-Grant is open to Student Chapters wishing to carry out an extracurricular activity to learn more and attract more vet students to the aquatics field.

We are receiving many applications but struggling to fund many valid proposals due to the lack of additional funding. We have just completed the Fall 2023 call for applications for the Student Chapter Mini-Grant, and will soon start the next calls of both small fellowship opportunities (Spring 2024).

We are kindly seeking donations to support these programs, and **we would like to invite you to donate**. Please go to the WAVMA.org website and use the "Donate Now" green button on our Scholarships webpage, and select the amount and option most suitable for you.

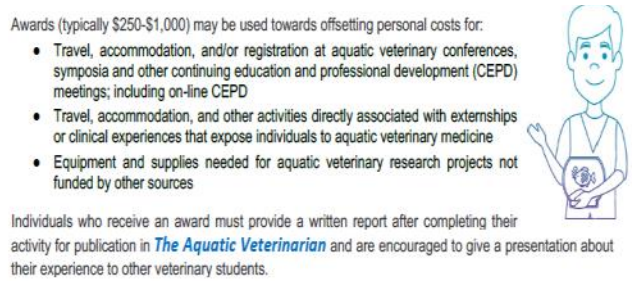
Please contact the WAVMA Treasurer for questions about other ways to contribute and how to get a certificate of donation, being that WAVMA is a non-profit (501(c)(6)) Professional Organization.

Wishing you a great holiday season!

Cheers,

Bartolomeo Gorgoglione, DVM, MSc, PhD, CertAqV
Chair of WAVMA Education and Students Committee

Robert Martinez, DVM CertAqV
Education Resources subcommittee leader
drrobmartinez@aquaticvetconsulting.com



John L. Pitts Aquatic Veterinary Education Award

2024 Program will begin accepting applications shortly. For more information, go to: WAVMA.org/scholarships.



WAVMA Shop

A number of WAVMA branded items (including shirts, mugs, caps) are available at the WAVMA Store. Get yours today!



Go to: http://www.wavma.org/Shop

STUDENT REPORTS

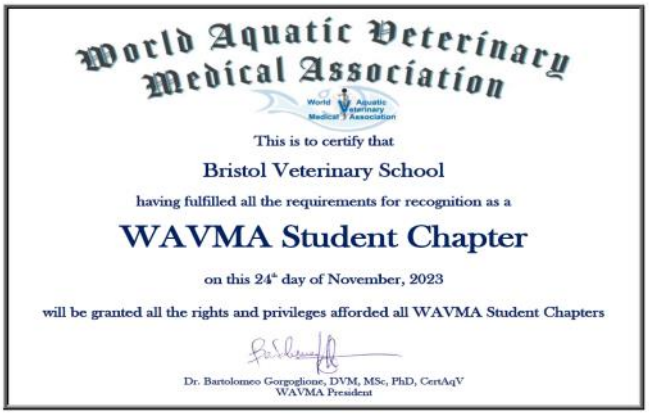


New WAVMA Student Chapter in Bristol, UK

We are thrilled to announce the establishment of a WAVMA student chapter at the Bristol Veterinary School. Our goal is to establish a community to encourage students in the care and welfare of aquatic animal. Through workshops, webinars, practicals and other activities, we are hoping to connect our peers with each other and with the wider aquatic veterinary professionals.

We are very grateful to be able to be part of the WAVMA community and we look forward to organising different events for our members!

Emma Yi Kwan Lau
WAVMA Student Chapter President
qs20744@bristol.ac.uk



World Aquatic Veterinary Medical Association

This is to certify that

Bristol Veterinary School

having fulfilled all the requirements for recognition as a

WAVMA Student Chapter

on this 24th day of November, 2023

will be granted all the rights and privileges afforded all WAVMA Student Chapters

Dr. Bartolomeo Gorgoglione, DVM, MSc, PhD, CertAqV
WAVMA President

TO SUPPORT FUTURE STUDENT SCHOLARSHIPS, PLEASE MAKE A DONATION TODAY TO THE SCHOLARSHIP FUND!

WWW.WAVMA.ORG/SCHOLARSHIPS.

New WAVMA Student Chapter at the University of Calgary Veterinary Medicine

The University of Calgary team is so excited to announce the establishment of the UCVM WAVMA Student Chapter and begin integrating our students into the WAVMA community. Being in a land-locked part of Canada, our students have limited access to veterinary medical opportunities relating to aquatic animals. In hopes of filling a gap in our industry in Calgary, we are starting the WAVMA student chapter to provide our students with educational experiences about the aquatic industry, spark interest in professional careers, and facilitate networking opportunities with aquatic animal professionals.



We have great enthusiasm, from students and faculty, with a diverse range of interests: ranging from wanting to learn about and discuss aquatic species for general interest, to a dream of pursuing zoological and aquatic internships and residencies after graduating from the DVM program.

Thank you for the warm welcome to the WAVMA organization! We are excited to be the first WAVMA student chapter established in Canada and to excel with you all going forward.

Katie Jones
DVM Student, Class of 2025
WAVMA Student Chapter Founder and President
University of Calgary, Faculty of Veterinary Medicine

Murdoch University WAVMA Student Chapter

As the year comes to a close, the 2023 committee of Murdoch WAVMA Student Chapter would like to give Dr Richmond Loh the utmost thanks for his continuous and unwavering support. We greatly appreciate his time and expertise.

We tried hard to continue the legacy of Murdoch Chapter from 2022, and held 4 events for students this year. As usual, the AQWA behind-the-scenes tour was a hit as our first event of the year, and we greatly benefited from 2022 president Aaron's help with the WAVMA mini-grant application last year. The mini-grant allowed us to have more participants in the tour as we were able to further subsidize the tickets. I have given the incoming committee some more information on that so they can apply for it in the second half of 2024.

Next, we organized a beachcombing + snorkeling event in collaboration with the Climate Action SIG, but due to weather and timetabling, this event was postponed and is due to be held in the first semester next year with our incoming president, Kimberly.

Of course, the ever-exciting fish necropsy workshop with Dr Richmond brought in over 30 interested students, our greatest turnout! Following that, our "Under the Sea" talk with Drs Karina Jones and Oliver Jewell gathered keen interest, especially from our committee members, who enjoyed staying back afterward to chat with the speakers regarding their experiences and future opportunities.









To end off the year, the Fremantle hatchery tour was a more intimate experience this time round, with a smaller group getting a guided tour with Lindsey Woolley through the inner workings of the amazing DPIRD facility.

We continued to advertise to marine science and marine biology students from Murdoch, learning from the success of the 2022 committee. We also managed to secure sponsorships with Unusual Pet Vets and Woodvale Fish and Lily, once again. I have heard the 2024 committee wishes to introduce sponsorship levels, and will also be in talks with the Murdoch Veterinary Students Association regarding getting more funding for our group.

Finally, our whole committee has worked hard this year. Shirley has been the greatest Vice-President in assisting with any things I required help with, be it planning, brainstorming, email communications, or logistics on the ground. Jessie has kept our bank statements updated, always submitting reimbursement claims right after events, and has all-round been an amazing Treasurer. Andrea put her creative mind to good use on social media posts and broadcasting emails to members and sponsors, informing them of upcoming events, while Tasha and Zhen have been wonderful general committee members, helping out with much of the logistics during events.

I have greatly enjoyed organizing events for WAVMA as president! Handovers with Kim have been done, and I will be staying on as general committee to help out in 2024, so I look forward to working with you again next year.

Signing off as president one last time,

Cole
WAVMA Murdoch Student Chapter President
Email: wavma.murdoch@gmail.com

STUDENT REPORTS

John L. Pitts Aquatic Education Award Report
Jamie Slater, DVM
November 16, 2023

Hello aquatic-oriented colleagues! My name is Jamie Slater,DVM. I am currently a veterinarian at a mixed animal practice on the North Carolina coast. I provide veterinary services to aquaculture farms within the area. Just before graduating veterinary school at North Carolina State University, I was fortunate enough to receive the John L. Pitts Aquatic Veterinary Education Award. This award helped to fund my experiences with fish health specialists, Dr. Nicole Nietlisbach and Dr. Danielle Godard, at the Wisconsin Department of Natural Resources (DNR), as well as my time at the Eastern Fish Health Workshop.

During my time with the Wisconsin DNR, I was able to learn from Dr. Godard and Dr. Nietlisbach about the intricacies of managing the health of several fish hatcheries throughout the state. These hatcheries reared a plethora of salmonid species in addition to musky, pike, and sturgeon. I was lucky enough to join in on tours and health checks for multiple hatcheries, perhaps one of the most memorable being the Nevin State Fish Hatchery located in Fitchburg, Wisconsin. This hatchery is known as the state's oldest fish hatchery, dating back to 1876. This coldwater hatchery is gravity fed from natural artesian springs. We were also able to visit more advanced hatcheries such as Wild Rose State Fish Hatchery, which stocks great Lake Michigan with sport fish such as spotted musky, trout and salmon.

While in the office, I was tasked to present a surgery protocol for telemetry transmitter implantation in lake sturgeon. This procedure is often performed by wildlife biologists to monitor the spawning behavior of lake sturgeon. Creating this protocol entailed careful and detailed research involving the surgical techniques such as incision size and location, suture type and closure to ensure the smoothest recovery for these fish. A great deal of this research included investigating potential anesthetic protocols using Aqui-S 20E under INAD. This presentation was extremely insightful for me as it pertains to general surgical techniques specific to fish, and will stick with me on my journey as an aquatic veterinarian.

After I wrapped up an incredible week with the fish health specialists in Wisconsin, I was off to my home state of North Carolina where the 46th Annual Eastern Fish Health Workshop was being held in Atlantic Beach. There, I was able to network and make lifelong friends with many new colleagues that I had only ever seen through a computer screen. Being able to learn from the presentations involving just about every sector of aquatic medicine broadened my knowledge as a new aquatic veterinarian.

Through these experiences, I was able to enter the world as a newly graduated veterinarian with a support system and knowledge that I would not have had otherwise. Most valuably, a new aquatic medicine family. I am extremely grateful for programs such as the John L. Pitts Aquatic Veterinary Awards Program which allowed me to attend these experiences. I plan to continue pursuing my passion to provide aquatic veterinary services to farmers, hobbyists and pond owners as a private practitioner. I look forward to seeing what is to come for the evolving world of aquatic medicine, and to being the support system for newly graduated aquatic veterinarians much like myself.



STUDENT REPORTS

John L. Pitts Aquatic Education Award Report
Sienna McDonald

Hello! My name is Sienna McDonald, and I am a fourth-year veterinary student at UC Davis School of Veterinary Medicine. I first developed a special interest in aquatic animal medicine via a UCD research project on the effect of three inactive vaccines against *Veronaea botryosa* infection in white sturgeon and have striven to become further involved in aquatic medicine ever since. I was awarded the John L. Pitts award in support of my participation in a veterinary externship at Aquarium of the Pacific in Long Beach, California.

This externship was invaluable in exploring aquatic animal medicine as a future career path. I had the opportunity to work closely with a wide range of patients, including teleosts, elasmobranchs, pinnipeds, amphibians, and birds. Both veterinarians on-site were incredibly supportive of my education; they provided abundant reading material for CertAqV training, didactic rounds and case discussions on various topics (including parasitology, animal quarantine protocols, and water quality), and mentorship throughout the duration of the externship.

During my three-week period at the aquarium, I had the opportunity to become more comfortable with venipuncture techniques, physical exams, and ultrasound imaging of various species. Some of my favorite activities included training two collection harbor seals to accept ultrasound probes for pregnancy checks, as well as progressive developmental ultrasound checks of zebra and epaulette shark eggs. The veterinary team also challenged me to develop treatment plans for each patient, as well as to perform medical record keeping in an aquarium setting.

I was able to gain familiarity with the sedation and anesthetic protocols commonly utilized for pinnipeds and fish, as well as commonly utilized species-specific medications, dosing frequencies and routes.





Furthermore, the veterinary staff continually ensured that I gained hands-on surgical experience, including a partial ovariectomy in a white-spotted bamboo shark, and a nasal mass removal in a zebra moray eel. They also made sure to include me on external visits to Cabrillo Aquarium and client appointments (including a large koi with cystic ovaries and a monogenean trematode infestation); these additional opportunities were beneficial in seeing different facets of the specialty.

Through aquarium connections, I also had the opportunity to spend two days participating in standard necropsies on eleven sea turtles in collaboration with NOAA. This was a wonderful opportunity to meet many others invested in sea turtle conservation. It was disquieting to witness the extent of anthropogenic impact on sea turtles firsthand; many carcasses contained fishing gear in their gastrointestinal tracts or displayed evidence of propellor strikes on their shells. I became very comfortable with chelonian anatomy, necropsy techniques, identification (Olive Ridley versus green sea turtles), and common presentations of stranded sea turtles.

External to the veterinary department, the Aquarium of the Pacific keepers enthusiastically shared their knowledge of collection animals; it was particularly interesting to gain further understanding of the veterinary-patient-keeper relationship in an aquarium setting. I was also able to spend time in the water quality laboratory on-site, where staff chemists shared their extensive knowledge of daily testing and troubleshooting protocols.

This externship was a fantastic experience and I highly recommend it to others interested in pursuing aquatic animal medicine. I thank the veterinary, animal care, and water quality teams for their limitless patience, kindness, and support. I fully intend to continue my pursuit of aquatic animal medicine and research via residency. My ultimate goal is to become a board-certified veterinarian in a clinical setting at an aquarium. I love the variety that aquatic medicine offers, and I look forward to contributing to the aquatic community!

STUDENT REPORTS

Onderstepoort Aquatics Club 2023: A Year of Achievements and Growth

The Onderstepoort Aquatics Club (OPAC) in Pretoria, South Africa has had a remarkable year, achieving a perfect balance between academics, community outreach, and fundraising. Despite facing challenges such as limited support from the University of Pretoria, the committee successfully executed a range of activities, contributing to the club's overall success.





Academic Endeavours

In the academic sphere, the club continued its Aquatic Medicine Course and expanded educational opportunities with additional guest lectures and the introduction of a new podcast. The launch of the Fish Room at the Onderstepoort Campus allowed for hands-on experience in fish husbandry, dissections, and research projects. The incorporation of scuba diving, including a trip to Sodwana Bay, emerged as a highlight, igniting students' interest and paving the way for future aquatic adventures.





Community Outreach

OPAC's commitment to community outreach materialized through the River Cleanup initiative, demonstrating a dedication to environmental stewardship. The club engaged with the local community, fostering relationships and educating residents about the impact of pollution and ways to prevent it. The success of this initiative has set the stage for potential expansion to other regions in the upcoming year.

Fundraising Initiatives

In addition to venturing into merchandise sales of crochet marine animal keychains and planning collaborative projects like PnP Shopping Bags with Dr Els and the Whales in Hermanus for next year, OPAC showcased its creativity in hosting successful fundraising events. The club organized a themed quiz night, providing an entertaining and intellectually stimulating environment that drew a significant turnout. Furthermore, the annual Dunk Tank event, jointly held with the Wildlife Committee at the Onderstepoort campus, became a memorable spring afternoon filled with laughter and camaraderie. Dunking popular lecturers and student leaders added a unique flair to the fundraising efforts, contributing to the club's overall financial success. These engaging events not only bolstered the club's funds but also served as platforms for fostering a sense of community among members and supporters.







Noteworthy Activities

The OPAC Committee's diverse range of activities included hosting the WAVMA Conference in December 2022, guest talks from industry experts like Dr. Brandon Spolander, and the launch of the OPAC podcast. The collaboration with international organizations, such as WAVMA, reflects the club's aspiration to provide even more opportunities for students in the field of Aquatic Medicine.









Looking Ahead to 2024

Despite facing challenges, the OP Aquatics Club expresses gratitude to main sponsors Hills and Specialized Aquatic Feeds, and acknowledges the invaluable guidance of Dr. Gillian Taylor and Dr. Johan Steyl. The club anticipates a smooth transition into 2024, with plans to collaborate with more international organizations and expand its academic, community, and fundraising endeavors.

In conclusion, the OP Aquatics Club's achievements in 2023 showcase a vibrant and engaged community committed to academic excellence, community service, and financial sustainability. As the club looks forward to the future, the groundwork laid this year promises exciting prospects for growth and continued success.

Denika Veerasamy
OPAC Chairperson 2023
opaquaticsclub@gmail.com

The Fish Doctor Is In: Meet Dr. Gary Marty
By Mari-Len De Guzman
October 30, 2023

In his long career in the public sector, Dr. Gary Marty has had his share of personal attacks. And he understands why. "One thing I realized is that if people cannot attack your science, then they will attack your reputation," said Marty. For 19 years, Marty worked as a diagnostic fish pathologist at the British Columbia Ministry of Agriculture's Animal Health Centre (AHC). Marty and his colleagues at the AHC were among only a handful of board-certified veterinary pathologists in Canada who specialize in fish. In 2017, Marty found himself in the middle of an investigation after certain anti-salmon-farming groups and individuals accused him of a conflict of interest when providing diagnostic pathology service to salmon farms.



"Part of my job profile was to serve both our government auditing and surveillance program and direct submissions from industry," Marty recalled. The then head of B.C. Public Service Don Wright was tasked to initiate an independent review, and subsequently engaged audit firm Deloitte to perform an independent assessment of the AHC's policies, procedures and controls related to ethics and conflicts of interest. In its final report, Deloitte found no evidence of financial or technical conflict of interest in the diagnostic activities of the AHC. The report even went further to say the AHC operates at the "highest levels of quality, both in terms of the depth and experience of scientists and veterinary pathologists on staff." Those findings were not surprising to Marty, as he was confident of the integrity of his work. As a veterinary doctor, he said he bears the same responsibilities as any medical professional – whether as a doctor for humans or animals.

"As a B.C. Public Service employee, I'm required to be impartial. I need to accept and provide medical services, my diagnostic services, to anybody who needs them, regardless of who pays. It would be like a physician asking if you're an NDP (New Democratic Party) or Liberal supporter and refusing to treat you because you're one or the other; that would be considered unethical (in the) medical profession," Marty explained. In addition to this ethical responsibility, Marty deems it is his obligation to educate the public on matters of animal health. The attacks on his reputation that he endured during his time at the AHC only solidified his intent to continue this quest even after he retired from public service in June 2023.

"Not all veterinarians will take on this responsibility themselves. But they do have a responsibility to refer to someone who is equipped to do that, and I'm quite happy to take referrals to help people," he said.

Photo above by Dianne Marty

Stellar career

Even at a young age, Marty has always been interested in fish. That fascination led him to pursue fisheries as a field of study, graduating with a bachelor's degree in fisheries and wildlife biology. During his first year of undergraduate studies, Marty had an opportunity to work in the pathology department of a veterinary school. It was where the path leading him to become one of Canada's experts in fish pathology was forged.

"At the time, I was not actually aware that fish got diseases. But they said I could be an expert on that, and that sounded very intriguing to me. So, I looked into it. And sure enough, fish do get diseases just like all other animal populations; they have viruses, they have bacteria, they have parasites. And there's lots of opportunities to understand those organisms and improve fish health," Marty said. Seventeen years later, Marty's training as a fish pathologist was complete, armed with a master's degree in fish biology, a PhD in comparative pathology, a degree in veterinary medicine, and board certification in anatomic veterinary pathology.

He joined the B.C. provincial government as a diagnostic fish pathologist in 2004, and for the next 19 years, he would spend much of his time analyzing and testing diseases in fish, both wild and farmed. In addition to his work at AHC, Marty maintains an appointment as a research associate at the University of California, Davis, School of Veterinary Medicine, and is an adjunct faculty at the Western College of Veterinary Medicine in the University of Saskatchewan. In 2020, Marty was recognized as an Outstanding Reviewer for the Canadian Journal of Fisheries and Aquatic Sciences.

"My specialty is fish pathology, diagnosing disease, and also putting into context how it can impact at the population level. So not just individual fish diagnosis, but also taking those diagnoses and applying them scientifically, at the population level. Of course, that's helped me a lot in dealing with some of the questions about interactions (between) farmed salmon and wild salmon," Marty said.

Data-driven

To date, Marty has co-authored 59 peer-reviewed scientific publications, one of which was a 2010 study published in *Proceedings of the National Academy of Sciences* that found no statistical correlation between sea lice levels on salmon farms and the lifetime survival of wild pink salmon populations. That study included an analysis of fish production data spanning 20 years and 10 years of sea lice counts from every salmon farm in B.C.'s Broughton Archipelago.

Sea lice in salmon farms and their effect on migrating wild salmon population have been the subject of much debate within and outside the scientific and aquaculture community. Thirteen years after Marty's 2010 study on sea lice and pink salmon was published, the Canadian Science Advisory Secretariat, which coordinates the scientific peer review and science advice for Fisheries and Oceans Canada, released a similar finding that there is "no statistically relevant association" between sea lice on farmed salmon and sea lice levels on wild juvenile salmon in B.C. These kinds of findings do not fly with anti-salmon farming activists and some members of the scientific community. They, too, claim there is evidence that suggests salmon farms are detrimental to wild salmon populations.

Marty is always up for a good discussion on fish disease and fish health, but the conversation should be premised on the evidence. When it comes to infectious diseases in salmon farms, decades' worth of data show that only three per cent of B.C.-farmed Atlantic salmon in any given year die of infectious diseases. Therefore, if the infectious disease is not spreading in the farms, the threat to wild salmon is even less, Marty said. And this is the message he intends to convey to those wanting to know more about fish diseases in both wild and farmed populations.

Immediately after Marty's retirement from B.C. Public Service, he started a private consulting firm providing senior fish pathology expertise in communications, teaching, diagnostics, and research. Of these, Marty considers communications as his most important task ahead – another soldier taking on the fake news machinery, one conversation at a time. Marty also hopes that by being part of educating future veterinary professionals, he is doing his share in building a new generation of fish pathology experts who are not just adept at the science but also equipped with the skills to effectively communicate the science to a broader audience. When asked what the biggest threat to the B.C. aquaculture sector is, Marty replies: It's the threat of imaginary diseases.

"The challenge we get is when that imagination starts to drive public policy, especially in the area of fish diseases, or fish health," said Marty. "The frustrating part for me is that the imagination is getting more press than the evidence."

Republished with permission from
the Aquaculture North America website:
https://www.aquaculturenorthamerica.com/the-fish-doctor-is-in/

REVIEW ARTICLE

Comparing the ABVP-Fish Practice and CertAqV
A history and list of requirements
By Satarah Jackson, DVM
sjacks@midwestern.edu

When I was a veterinary medical student, I had always wondered why there was no official board certification specializing in any form of aquatic medicine. When it came to American Veterinary Medical Association (AVMA) specialty certifications, mentions of fish and marine mammal species appeared in conjunction with zoo (American College of Zoological Medicine), laboratory animal (American College of Laboratory Animal Medicine), and in some part reptile and amphibian (American Board of Veterinary Practitioners) categories. As a broad field with many applications, it seemed odd that there was no recognition for what aquatic veterinarians do except for the WAVMA Certified Aquatic Veterinarian (CertAqV), which is to indicate doctors (and now veterinary technicians) with "Day One" competency in treating aquatic animals.

Now, as a graduate veterinarian, it was with great excitement that the AVMA granted recognition of fish practice as a registered specialty in March of 2023, with the first class of Board Diplomats announced in November 2023. According to the American Board of Veterinary Practitioners' website (ABVP.com) "certification is challenging but rewarding. Veterinarians must have at least 5 years of full-time, high-quality practice experience with various fish species and be able to document a commitment to high-level continuing education." When reading the description of this program, it reminded me a lot about what is required of CertAqV veterinarians, except that Board Certification requires a minimum of 5 years of practice, while CertAqV can be obtained at any level of experience, with adequate CE credits. In order to fully understand what the professional requirements and process looks like, I believe an article dedicated to discussing both CertAqV and ABVP-Fish Practice will help clear any confusion.

I reached out to three industry experts for their opinion and viewpoint with a questionnaire. Dr. Johnny Shelley MS, DVM, CertAqV, DABVP-Fish Practice is a veterinary medical officer for NOAA and co-author of the ABVP-Fish Practice proposal. Dr. Roy Yanong, VMD is a University of Florida professor who works in the Tropical Aquaculture Laboratory and co-author of the ABVP-Fish Practice proposal. Dr. Natalie Stilwell DVM, MS, PhD, DABVP-Fish Practice is an assistant clinical professor at Mississippi State University and she, along with Dr. Shelley, recently passed the ABVP-Fish Practice inaugural exam. Dr. Yanong wrote the examination, so was not able to take it this time, and will be eligible to take the exam when it is reworked by the new Diplomats.

To begin, I feel it is necessary to discuss the history behind these certifications and a brief recap of aquatic medicine in general. WAVMA itself was founded in 2006, but some aquatic medicine organizations have been around for longer. The IAAAM was founded in 1969 and primarily focused on marine mammals at the time. Other important organizations of note with their founding year include the European Association of Fish Pathologists (1979), Fish Veterinary Society (1990), and American Association of Fish Vets (2012). The earliest course dedicated to aquatic medicine was AQUAVET®, which started in 1976. With a growing need for added topics and detail, AQUAVET® II had its first class in 1983.

When it comes to the board certification, the original thought was to propose it under ACZM. Per Dr. Shelley, the ACZM board examination is split into two days, with day one mainly covering zoo animals, such as birds, wildlife, and megafauna, with only a small percent focused on fish. Day two is the mostly aquatics discipline, but it is understood that this focused exam does not equal a specialty in aquatic animal medicine. There is no differentiation between those veterinarians who specialize in zoo versus aquaria, and although there were conversations with ACZM colleagues, it was determined that Fish Practice would not be a good match with that specialty. This left the ABVP as a potential option as "the species specific recognized veterinary specialty organization was much more relevant" according to Dr. Shelley. The American Association of Fish Veterinarians (AAFV), with support from the World Aquatic Veterinary Medical Association (WAVMA), began the process of developing a petition to have fish practice recognized as a veterinary specialty within the American Board of Veterinary Practitioners (Cima, 2022). The specialty would help identify veterinarians with training specific to fish.

Back in 2013, AAFV had the idea of creating a certificate program, but there was concern about relevance due to the American Fisheries Society–Fish Health Section and WAVMA having already established certification programs. The ultimate decision was made by the AAFV to create a formal Fish Practice Certification Committee in 2019. That year the AAFV sponsored a second official committee establishing the Fish Practice Certificate Organizing Committee (OC). This was comprised of members, most of whom are CertAqV, representing private practice, aquaculture, aquaria, government, academia, and pathology. In 2020, the WAVMA President-Elect at the time suggested that the CertAqV program already met ABVP criteria and ABVP should be re-approached with CertAqV data.

On March 7, 2023, Drs. Shelley and Yanong formally presented the ABVP–Fish Practice proposal to the AVMA American Board of Veterinary Specialties, and on March 10, Fish Practice was granted provisional approval to be formally recognized as an AVMA registered veterinary specialty. Dr. Shelley serves as the Fish Regent and acts as the liaison between various parties, such as diplomates, applicants, board of directors, etc. As such, he did not sit on the

exam subcommittee that created the test, but took and passed the inaugural examination. The exam subcommittee is headed by Dr. Yanong, who volunteered as Vice Chair for Fish Practice and worked with other veterinarians in different disciplines to create the first Fish Practice examination.

CertAqV

Since 2013, over 240 individuals internationally have gained WAVMA's CertAqV certificate with an average growth of 30% per year over the last 5 years, leading up to the ABVP-Fish Practice proposal submission, according to Dr. Shelley. While the WAVMA credentialing program officially states on the application packet "it is not the intention of the WAVMA CertAqV Program to duplicate, supersede, or replace the need for any aquatic veterinary courses, curricula, or Board Certification programs in aquatic veterinary medicine" (WAVMA.org), prior to 2023 it was the only Fish Veterinarian certification option.

Requirements: The requirements for CertAqV are simple. After a formal application and paying a fee of $250 USD, applicants have a year to submit their certified training documents on core Knowledge, Skills, and Experiences (KSE) in nine different categories. Mentorship is required and there is a dedicated network of colleagues available to assist. Recertification is every 5 years with a fee of $50 USD, and an additional 50 credits of continuing education required for recertification. There is no examination for CertAqV.

Discussion: Many continuing education (CE) credits are free and widely available, which makes this certification accessible to all with little to no barriers. There is also a continuing education and professional development program available online (WebCEPD) on WAVMA's website. This addition allows participants to gain a CEPD certificate after successfully answering a quiz than can be used to qualify for certification. Other positive notes are that the CertAqV letters after one's name is recognized internationally and the WAVMA chat board (email Listserv) is active and questions are responded to within a reasonable time by professionals. According to experts, there is little to no likelihood that CertAqV application will wane or fall shadow to ABVP Fish Specialty. In fact, the "ABVP-Fish Practice will actively encourage and support prospective candidates to pursue earning their CertAqV credentials as part of the experiential pathway to gain the necessary fish practice experience required for credentialing" noted Dr. Shelley.

ABVP-Fish Practice

Presentations about this board certification were given in March 2023 at the ABVS conference by Dr. Shelley and Dr. Yanong, and at the AAFV conference in October 2023 by Dr. Shelley. Full recordings of those presentations can be found on the organization's website. November 4, 2023, was the inaugural exam for those who worked on the project, and January 15, 2024, is the deadline for submitting application for the next examination that is offered to all veterinarians. For those interested, an applicant handbook was made in August 2023 and can be found on the ABVP website.

Requirements: The application has a deadline of January 15, 2024, but exam registration/payment is due September 1. Initial application is $590 USD and exam fee is $680 USD. Re-application for 2nd/3rd time credentials are $440. Candidates must take the exam in the same year as credential submission. The exam outline follows most specialty exams with 350 questions given in two parts on the same day. Each part has two sections and multiple-choice questions are the



most common. Fill in the blank, essay, and matching questions are also a possibility. No more than three years and three attempts will be allowed for successful accreditation.

Discussion: There is an exam study guide offered that outlines the blueprint of topics with the percentage at which they are asked. Textbooks and primary journals that would be used as test material are listed with clear expectations of what is "fair game". These resources are not only a good study aid, but most are already common literature for fish practice. Dr. Yanong stated that some of the goals of this board "include a) raising the bar for fish medicine veterinary practice both in clinical practice and in accruing knowledge, b) alerting and providing stakeholders (the general public, state, tribal, federal agencies, university, commercial businesses, other institutions) to veterinarians with more advanced, documented training in fish medicine, and c) enhancing and advancing health and welfare for fish in human care and in natural habitats". It should also be stated that questions regarding aquatic invertebrates, birds, reptiles, amphibians, and mammals are not included, per the ABVP website.

As someone who recently passed the board exam, Dr. Natalie Stilwell DVM, MS, PhD, DABVP-Fish Practice said the "exam was quite challenging and required a significant amount of preparation and review" associating the exam to NAVLE in terms of length and question type. Even with this intense difficulty level "questioned material was straightforward and the recommended study materials provided me with an appropriate level of preparation."

Overall, both recent test takers highlighted the need for professionals that understand the anatomy, physiology, and pathology of pets, aquaculture, aquaria, and fish used in research. As shown, there are many benefits to both certifications. For those just beginning their journey, the CertAqV is a great place to start. For those with years of experience and advanced training, maybe the ABVP-Fish Practice board exam is worth a try. Whichever one someone chooses to pursue does not change the passion behind their practice of aquatic medicine.

I want to thank Dr. Shelley, Dr. Saint-Erne, and Dr. Yanong for their time and support of this article. Questions about the ABVP Fish Practice board certification can be sent to fishregent@abvp.com.

References:

Cima, Greg. Fish medicine specialty proposed, *JAVMA,* August 2022. Online June 24, 2022. https://www.avma.org/news/fish-medicine-specialty-proposed

WAVMA Certified Aquatic Veterinarian (CertAqV) *program*. WAVMA.org (2013). https://www.wavma.org/CertAqV-Pgm

Recognized veterinary specialties. American Board of Veterinary Practitioners. (2023, October 31). https://abvp.com/veterinary-certification/recognized-veterinary-specialties/



The Museum of Aquarium & Pet History
By Gary Bagnall
September 1, 2023

In the world today, there are over 100,000 museums devoted to the purpose of collecting, preserving, interpreting, and displaying objects of artistic, cultural, or scientific significance for the study, education, and viewing pleasure of the public. Yet with all these museums (and 35,000 in the U.S. alone), there are none devoted to aquarium or pet-keeping history. Welcome to the Museum of Aquarium & Pet History (MOAPH.org), which celebrated its one-year anniversary in July of this year. Although there are 15 dog or cat museums worldwide, none have covered the aquarium, bird, small animal, or the history of the pet industry, and the people in it before.

The MOAPH museum idea started in my teens when I saw my first picture of a Victorian fountain aquarium and wanted to know everything about this magnificent aquarium and work of art. The problem was that there were no books on pet history at the time (except a few on dog or cat history), so I was on my own. Forty-plus years of collecting aquarium and pet artifacts later, the Museum of Aquarium & Pet History was born.



Today the MOAPH museum has the world's most comprehensive collection of artifacts related to aquarium and pet keeping, which includes over 3,000 antique aquariums, antique fishbowls and stands, bird cages, squirrel cages, dog & cat food cans, boxes and cloth sacks, turtle products, and even pet items that belonged to Queen Victoria or famous movie stars. The museum also includes the largest collection of books on the aquarium, dating back to the 1850s when the glass aquarium was invented, plus other pet books on canary birds or small animal keeping, dating to the late 1700s! The museum library also has the largest collection of aquarium club newsletters (1,000s) dating back to the early 1900s. The museum library has over 10,000 books and magazines on the aquarium, birds, dogs, cats, and other pet-keeping subjects!

Currently, the MOAPH museum is online only, but we recently procured a 10,000-square-foot building with hopes of having a physical museum open to the public in a 3 to 4-year timeframe. The online MOAPH museum has new monthly content with original articles written by some of the best pet historians in the world. We also have an active YouTube channel with new “5-minute video” weekly releases, plus a main pet history video release monthly.

In the first year that MOAPH has been active online, we have had videos on the history of companies like Penn-Plax, Eheim, plus Jon Willinger speaking about the history of his father’s involvement in Wil-Ness, Metaframe, Willinger Bros., Living World/Mattel, and of course his own company JW Pet. We also have many articles on reptile keeping from well-known reptile herpetologists James Murphy and Jon Coote. The very first YouTube video we put out has an overview of “Building #1” which is the only one of the four buildings (the other three are for storage) that is set up as a museum. It took two years to set this building up in a museum display fashion, which was accomplished during the slow times of COVID.

Back to YouTube videos; MOAPH has the only videos related to the history of commercial-made Victorian and Art Deco era bird cages. Currently, our two most viewed videos. Our stable of writers are from the U.S., Italy, Germany, and England. Still, we are always on the hunt for more writers that have lived pet history by working in the industry or are aquarium or pet-keeping hobbyists.

Moving forward, MOAPH is always looking to interview companies that have historical significance (longevity) in the industry, or famous hobbyists that have created new color morphs of tropical fish or reptiles (think Ball Pythons) or have “cracked the code” on breeding rare and difficult species. We also like to interview family members who remember the histories of companies, or hobbyists in their family long past. Currently, MOAPH has a small staff of three people who put up all the weekly/monthly content. We also have three full-time writers plus several hobbyists who write one to three articles per year for us. If you are interested in writing a historical article related to pet keeping please get in touch with us via our website: MOAPH.org

Continued on next page.

Lastly, if you want to support this new museum going forward, you can do so in two ways; one is to donate any aquarium or pet artifact, books, magazines, papers, etc., to the museum that you have sitting in your garage collecting dust, or two; go to the website and make a financial one time or monthly donation. The Museum of Aquarium & Pet History is a non-profit 501C.

The Museum of Aquarium and Pet History
3650 Sacramento Drive
San Luis Obispo, CA 93401 USA
(888) 496-6633 Toll Free
(805) 542-9988 Direct
https://www.moaph.org
gary@moaph.org

Reprinted from *Pet Age* Magazine, with permission.
https://www.petage.com/the-museum-of-aquarium-pet-history-moaph-celebrates-historical-artifacts/

Photograph on previous page:
A large cast iron Fountain Aquarium manufactured in the 1870s by J. L. Mott company. These unusual aquariums would be placed in an outdoor garden or greenhouse (called a conservatory in England) and would have goldfish or native fish in them.

Photograph Below:
A custom-made Steampunk Aquarium patterned after Captain Nemo's 20,000 Leagues Under the Sea movie. The Steampunk movement was created from the fantasy mind of Jules Verne, the author of the book of the same title.
Notice the mechanical "Kracken" (octopus) being controlled by Captain Nemo in this art piece's glass dome head portion.





An interior view of "Building #1" that was set up as the prototype for the upcoming physical museum to be open to the public in 3 to 4 years time.
The walls are covered with vintage pet store signs, plus dog and bird company product signs.
In the front is an assortment of vintage bird cages, aquariums, and rare Vaseline fishbowl stands.

About the Author:

Gary Bagnall has worked in the pet industry for over 55 years, starting at Russo's Wonderful World of Pets at age 11. At age 13, he co-founded the Orange County Aquarium Society with his co-worker Howard Keffer; at age 16, he managed his first pet store, Southwest Pet Center. At age 19, Bagnall briefly worked for a tropical fish wholesaler in Los Angeles and, in the same year, started his live reptile import/export business, California Zoological Supply. Cal Zoo leads to a spin-off making products for reptiles which is Zoo Med Laboratories, Inc., still in business today. Bagnall holds six reptile product patents but is most proud of inventing the first UVB lighting for reptile enclosures, now the standard the world over. Bagnall has earned Lifetime Achievement Awards from both the World Pet Association and the American Cichlid Association. He is currently chairman of the board of USARK. (United States Association of Reptile Keepers.)



A giant Avery bird cage made in the French provincial style. This Avery dates to the late 1800s and would have been made for a European castle.

Victorian Aquarium



Antique Brass-framed Aquarium



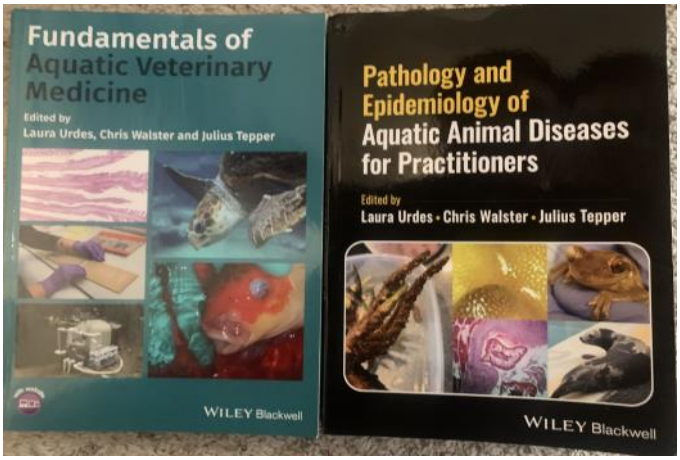
Antique Betta Bowls on display at Zoo Med Laboratories.



An assortment of vintage turtle products back when hatchling turtles were legal to sell. Circa 1930 to 1970s.



Book Review
Pathology and Epidemiology of Aquatic Animal Diseases for Practitioners (2023)
Edited by Laura Urdes, Chris Walster, Julius Tepper



This book is intended to complement the book *Fundamental of Aquatic Veterinary Medicine* (Wiley Blackwell, 2021) by the same editing team. It further describes the pathology of Aquatic Animal disease by taxonomic grouping. There are XXIV + 422 pages, including 8 pages of index. There are color photographs throughout the text. The new book covers additional information not included in the first one, including aquatic species other than fishes, and does not repeat previous information from the Fundamentals book. Sixteen authors from around the globe contributed the articles for this sequel. It is intended to be useful for clinical veterinarians, with comprehensive tables at the end of each aquatic animal group chapter describing the clinical signs of common diseases.

Part I covers the Pathology of Aquatic Species, which describes the manifestations of diseases caused by major pathogens. There are chapters on:

Aquatic Invertebrates, p. 3-80
Teleost Fish, p. 81-114
Amphibians, p. 115-135
Reptiles, p. 136-176
Aquatic Birds, p. 177-213
Aquatic Mammals, p. 214-350

Part II covers Epidemiology and Animal Health Economics, with chapters on:

Epidemiology Keyword Refresher, p. 353-375
Sampling and Diagnostic Testing, p. 376-381
Biosecurity, p. 382-403
Animal Health Economics, p. 404-414
Index, p. 415-422

Each Part I chapter ends with an extensive list of references, and an Appendix that has a table of etiology and clinical signs of commonly encountered pathogens. Chapter 1 - Aquatic Invertebrates provides information on diseases of common marine aquarium inhabitants that is not found in most aquarium books. Many fish veterinarians are at a loss when asked for assistance by marine aquarists for diseases in their corals, clams, cephalopods, or crustacea. Unfortunately, there is no information on sea star wasting disease in this chapter.

Chapter 2 - Teleost Fish only covers metazoan parasites: trematodes, leeches, myxosporea, crustacea, nematodes, and cestodes, as infectious diseases and protozoan parasites were covered in the previous book. For fish medicine practitioners, there is limited information in Chapter 2, however, the other chapters make up for this with chapters about other aquatic animals missing from other fish health books.

Chapter 3 - Amphibians covers Ranavirus, bacteria, ammonia toxicity, gas bubble disease, chytridiomycosis in frogs and salamanders, nephrocalcinosis, mycobacteriosis, nematodiasis, hypovitaminosis A, corneal lipidosis, renal adenocarcinoma, herpesvirus, hemoparasites and ascities.

Chapter 4 - Reptiles includes sections on Marine turtles, freshwater turtles, crocodilians, marine iguanas, and sea snakes. The diseases include viruses, parasites, bacteria, fungus, nutritional diseases, and non-infectious diseases.

Chapter 5 - Aquatic Birds will be invaluable to the aquatic veterinarians who do see water fowl and aquatic birds in their practice. The diseases covered include parasites, viruses, bacteria, fungus, non-infectious diseases, and toxicoses.

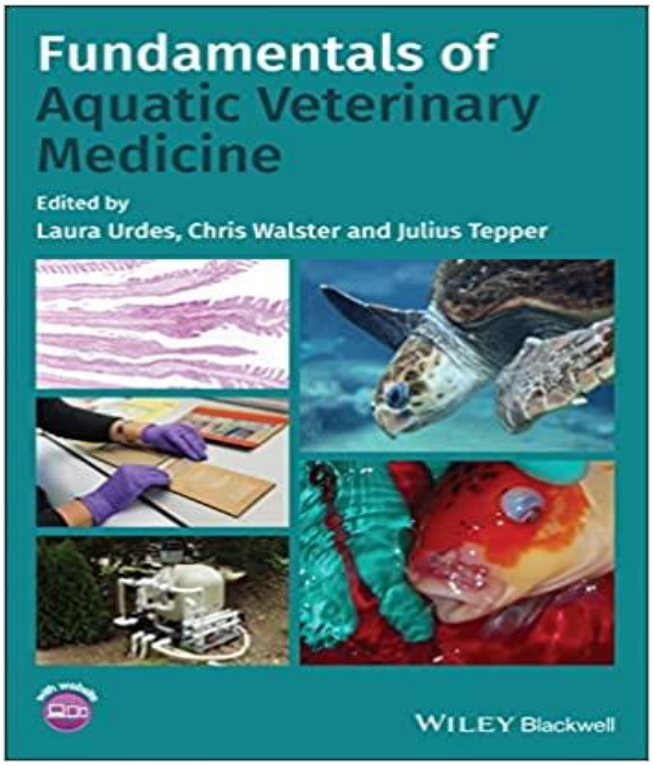
Chapter 6 - Aquatic Mammals is the largest chapter (137 pages) and covers parasites, bacteria, fungus, viruses, non-infectious diseases, toxins, congenital disease, degenerative diseases, and trauma.

The second part discusses epidemiological principles, as well as animal health economics, and biosecurity. It provides examples to help the reader understand and use epidemiologic methodology, and reviews the basic concepts of probability. There is information on how to use the computer software program Excel to create spreadsheets that display the probability of events.

The Sampling and Diagnostic Testing chapter is not about what samples to collect to send to the lab, but discusses the mathematics behind how many animals in a population should be sampled to provide reliable results about the health of the population being tested. None of the other fish health books in my library cover this type of information that would be valuable for veterinarians working in production facilities.

The Biosecurity chapter discusses disease risk management and mitigation, again, valuable for any one working with large numbers of fish to maintain the lowest risk of diseases entering the facility.

Overall, this is an important new book for aquatic veterinarians. Paperback and eBook versions are available from Amazon.com starting at $136 USD.

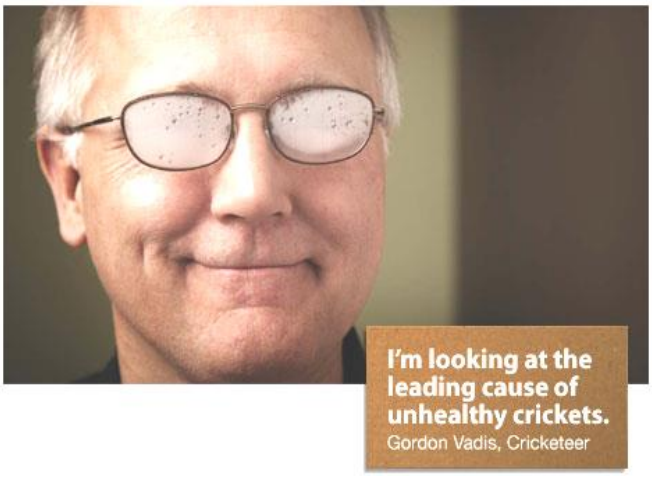


Fundamentals of Aquatic Veterinary Medicine covers the competencies necessary to assure the highest quality of aquatic veterinary services. This book provides systematic, practical guidance on the treatment of aquatic mammals, amphibians, fish, and invertebrates in veterinary practice.

Covering the nine core areas of the WAVMA Certified Aquatic Veterinarian (CertAqV) Program, this comprehensive clinical reference covers taxonomy, anatomy and physiology of aquatic species, water quality and life support systems, diagnostics, treatment, and prevention of aquatic diseases, and more. Designed to help readers acquire and demonstrate the necessary knowledge, skills, and experience to be competent in aquatic veterinary medicine, this authoritative guide:

- Focuses on "Day One" competencies outlined by the World Organization for Animal Health (OIE)
- Covers pathobiology and epidemiology of aquatic diseases, public health, zoonotic diseases, and seafood safety
- Provides up-to-date information on relevant legislation, regulations, and policies.

Fundamentals of Aquatic Veterinary Medicine is a must-have reference and review guide for veterinary students and practitioners interested in practicing aquatic veterinary medicine, as well as for aquatic veterinarians looking to become WAVMA certified or wanting to acquire OIE "Day One" competency. Available from Amazon.com for $102 USD.



The Bug Company, home of the world's tastiest, organic, and most nutritious line of insects! Since 1947 The Bug Company has refined its ability to produce and distribute only the healthiest live insects including Acheta Crickets, Mealworms, Super Worms, Fruit Flies, Wax Worms and more. We are proud to offer our line of bugs, which are second to none in gut-loaded quality nutrition for reptiles, turtles, birds, lizards, amphibians, fish and arachnids. Raised in temperature controlled all-natural settings, our bugs are reared on a strict diet of organic, vitamin-filled, high-quality grains and feed, making our insects the most responsible choice for creatures and pets of all kinds.

We carry a full line of tasty bugs, but our specialty and most popular product is the *Acheta domestica* cricket, otherwise known as the house cricket. Our crickets come in seven sizes, from pinheads to adults - sizes to satisfy the natural instincts of predators large and small. Our products are distributed throughout the United States and Canada to pet and birding/nature product retailers large and small. Browse the web site for more information, or to order your Crickets, Mealworms, Super Worms, Wax Worms or Fruit Flies right now, Click Here! http://www.ebugco.com/

The Bug Company
15941 Tippecanoe St. N.E.
Ham Lake, MN 55304
Phone: **1-888-777-2248**
For general information or questions
info@ebugco.com
For sales or pricing information
sales@ebugco.com

GRAND ROUNDS CASE

Questions & Answers from the WAVMA Listserv
(WAVMA_Members-L@wavma.org)

Encysted Gill Trematodes

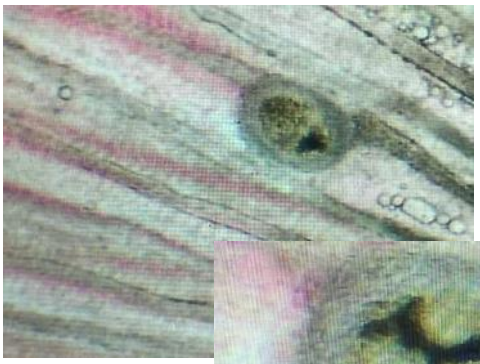
Hello,

Hope everyone had a good holiday. I am looking for an identification of a parasite from a Pearl Danio. Slow losses over the year. Mixed with other schooling fish, but the pearl danios have been dying off. This was the last one that was showing some white spots and ulcers. At rest, it would almost have its front end pointing towards the surface.

I euthanized the fish with MS-222. Skin scrapes showed a lot of mucus, nothing was found on fin clip biopsy. I couldn't get a good gill clip so I took forceps and removed a full gill arch. I found a few of these cystic objects on the gill samples. This is the first time using this new program for photos and videos so the quality isn't the best but these cystic areas had what looked like a black "X" as a "nucleus" that would move. You can see it goes from one side to the other in the two photos. I tried to get a video but the "nucleus" stopped moving. Photos from microscope were taken at 10x and 40x. Can anyone identify this and could it be significant? Thanks very much.

Paul Manesis MVB CertAqV
Fish & Bee Mobile Veterinary Services





10X

40x



Hi Paul,

I believe those are some species of digenean trematode. If you only found them in low numbers within the gills, I would not expect them to be a significant contributing factor to the mortality you are describing. I've seen them so bad in all sorts of danios where the gills would be completely flared out, but the fish would otherwise appear fine as long as the DO was appropriate. My guess is something else is likely the primary factor.
Cheers,

Johnny Shelley, MS, DVM, CertAqV,
DABVP - Fish Practice

The Digenean trematodes contain over 6,000 described species. They are typically identified in wild fish and less commonly seen in captive species, because they require multiple hosts to complete their life cycle. This class of Platyhelminthes parasites has a complex indirect lifecycle. Adult stages of many of the species infest the gastrointestinal tract of the definitive host.

Control of these parasites focuses on preventing the continuation of the lifecycle. This is achieved through controlling access by birds (the definitive host) to ponds, and getting rid of the first intermediate snail hosts with molluscicides. Fish can be treated with praziquantel to eliminate the trematodes. Intramuscular praziquantel injections (25 mg/kg body weight [BW], one time) may eliminate the encysted metacercaria.

Centrocestus formosanus is a digenean trematode that causes gill disease. Its first intermediate host is a snail, with the second intermediate host being the fish. The definitive host is mammal or piscivorous bird, commonly reported as being the green heron and great egret. Eggs are laid in the definitive host's intestinal tract and pass into water with the feces. The eggs hatch, releasing miracidia, or the eggs are ingested by snails. The miracidia develop into cercariae within snails. The cercaria leaves the snail and penetrates a fish where it encysts and develops into a metacercaria. The fish is then ingested by the final host and the parasite matures within the mammal or bird's gastrointestinal tract.

Physical changes seen on examination of a fish with this parasite are associated with the parasite's affinity for the cartilage tissue. Within the intermediate fish host, the parasite migrates into the gill tissue, specifically the cartilage and matures to a metacercaria causing proliferation of the cartilage in the gill arch. This can cause dilated gill filaments with adhesions between gills, as well as hyperemic gills. In severe cases, fish will appear in respiratory distress.

Trematode excerpt from
The Handbook of Ornamental Fish Health and Welfare
Nick Saint-Erne, DVM CertAqV

MEETINGS OF INTEREST TO AQUATIC VETERINARIANS

Veterinarians attending these meetings may be awarded veterinary CEPD credit towards annual re-licensure or re-registration to practice veterinary medicine. Individuals should check with the organizers to see if CEPD certificates are provided.

WAVMA Resources for CertAqV and CertAqVN/T
www.wavma.org/WebCEPD
Resource: one hour Webinars on various topics
Cost: Available for free to WAVMA Members.
KSE Credit: Stated for each webinar. To gain the CEPD certificate you need to complete a short quiz.
Evidence: Submission of Certificate with KSE record.

www.wavma.org/video-library
Resource: Video recordings deemed of good quality but not part of WebCEPD
Cost: Free to WAVMA members
KSE Credit: Variable,
Comments: One of WAVMA's primary aims is to promote aquatic veterinary medicine. There are other resources WAVMA provides such as The Aquatic veterinarian, member listservs, e-news and blog.

Aquadocs
www.aquadocspodcast.com
Resource: Various discussion topics
Cost: Free
KSE Credit: Dependent on time and topic
Evidence: None. Discuss with mentor
Comments: Lots of information on various topics.



AQUAVET® A PROGRAM IN AQUATIC VETERINARY MEDICINE www.aquavet.org

AQUAVET® 2024 COURSE ANNOUNCEMENTS

We are pleased to announce the AQUAVET® 2024 courses and related information. AQUAVET® I and II will be presented at Roger Williams University in Bristol, Rhode Island. Bristol is a picture perfect New England town about 20 minutes from Newport, RI.

AQUAVET® I -An Introduction to Aquatic Veterinary Medicine The course is designed for veterinary students and veterinarians who have an interest in applying their veterinary training to aquatic animals.
Duration: 4 weeks – May 27 to June 23, 2024
Fee: $2,750 for full-time veterinary students, although a program benefactor will pay $200 for each student, bringing the cost down to $2,550. This includes tuition, room and most meals.

AQUAVET® II – Comparative Pathology of Aquatic Animals The course is oriented toward the pathology of vertebrates and invertebrates commonly used as laboratory animals, encountered in display aquaria, and of importance to aquaculture enterprises.
Duration: 2 weeks – May 27 to June 9, 2024 – Prerequisite: AQUAVET® I Fee: $1,665 for full-time veterinary students. This includes tuition, room and most meals.

AQUAVET® Summer Research Fellow (one offered) Fellows pay no tuition for the 8 weeks of the research program itself and will be reimbursed for room and board expenses. In addition, research student will receive a stipend of $3,800 for the research period.
Duration: 8 weeks following AQUAVET® I – Prerequisite: AQUAVET ® I
Venue: Laboratory at Cornell University, NY.

Detailed information about the courses is available on the AQUAVET website. The specific course programs for each course in 2023 are also listed there.

Applications for admission are due by January 15, 2024. The application is available on the website. You will receive an e-mail acknowledging receipt of your completed application and supporting materials.
Please visit the website at: www.aquavet.org.

Donald W. Stremme, V.M.D.
AQUAVET® Director
College of Veterinary Medicine, Cornell University

AQUACULTURE AMERICA 2024
San Antonio, Texas, Feb. 18-21, 2024.

AA 2024 returns to one of the favorite tourist spots in the world for the only major national aquaculture conference and exposition held in the U.S. The U.S. Aquaculture Society (formerly U.S. Chapter of WAS) joins with National Aquaculture Association and the Aquaculture Suppliers Association to produce the annual Aquaculture America meetings. These sponsors are joined by the annual meetings of Aquacultural Engineering Society, US Trout Farmers Association and many more associations to make Aquaculture America 2024 the one meeting in the U.S. that you don't want to miss!

Aquaculture America 2024 will have the largest aquaculture trade show in the Western Hemisphere and one of the largest anywhere in the world with nearly 200 booths! This is your opportunity to inspect the latest in products and services for the aquaculture industry. It is the place to visit current suppliers and make new contacts. To keep ahead and to keep profits building, you need to keep pace with the technological advancements in the industry - and AQUACULTURE AMERICA 2024 is the place to do it! www.was.org.

ASIAN PACIFIC AQUACULTURE 2024 – APA24
Surabaya, Indonesia – June 11-14, 2024.

Aquaculture – Driving the Blue Economy is the theme of the conference at the Grand City next year.
The event is hosted by the Ministry of Marine Affairs & Fisheries and co- organised with PT Tirta Anugrah Abadi. Asian Pacific Aquaculture 2024 will be the next chance for the international aquaculture community to visit Indonesia and see the rapidly expanding aquaculture industry in Indonesia – nearly 20% increase in the last 5 years in hectares in aquaculture production and over 50% per year increase in tons produced every year for the last 10 years! Now more info online on www.was.org – info on booths and sponsorship - mario@marevent.com.

49th WSAVA World Congress - 2024
Shanghai, China



ACUARIO MICHIN

The next International Aquarium Congress in 2024 will take place at Michin Aquarium, Guadalajara, Mexico!



Discover core knowledge, skills & experience needed to become a WAVMA Certified Aquatic Veterinarian *(CertAqV)*

Did you know that WAVMA's ***CertAqV Program*** offers members the opportunity to become recognized and certified as having competency in 9 core areas deemed necessary to practice aquatic veterinary medicine? Find out more information online at: http://www.wavma.org/CertAqV-Pgm.


REGISTER NOW!
PISCINE ORTHOREOV
DISTRIBUTION, CHARACTERIZATION A
EXPERIMENTAL INFECTIO
SALMONIDS
Dr. Niccolò Vendramin
25TH
FINS, SCALES, AND SHELLS: ONE HEALTH FROM AN AQUATIC VETERINARY EPIDEMIOLOGICAL PERSPECTIVE
DR STEPHANIE NORMAN
APRIL 28, 2022 02:00 PM UTC
AQUATIC INVERTEBRATE WELFARE: OPPORTUNITIES FOR IMPROVEMENT
May 25th, 2022
World Aquatic Veterinary Medical Association
WebCEPD Program
WEBINARS FOR GLOBAL AQUATIC VETERINARY EDUCATION
LEARNING ABOUT AQUATIC VETERINARY TOPICS AND OBTAINING CREDITS FOR CONTINUING EDUCATION
Administered by the WAVMA Education and Students Committee
Monthly lectures on relevant aquatic health topics
By leading experts in their fields
Free, upon registration!
Free to watch again for WAVMA members!
Earn Continuing Education and Professional Development (CEPD) credits
Help becoming a WAVMA CertAqV or CertAqVNT
Gill disease in Atlantic salm
a complex situation
DR PATRICIA ROSWERA
ENVIRONMENTAL DNA FOR THE STUDY OF OCEAN BIODIVERSITY FROM MICROBES TO VERTEBRATES
TENACIBACULOSIS in SALMONID SPP.
MICROSPORIDIOSIS IN THE SHRIMP INDUSTRY
Sanitary challenges in salmon aquaculture in Chile
DR. MARCOS GODOY
For more information, visit
www.wavma.org/WebCEPD

2023 INDEX

The Aquatic Veterinarian 2023 Index:
[Key = Volume (Issue):Page Number]

Editorial
- Editor's Note 17(1&2):4, 17(3):4, 17(4):4
- Advertising Rates 17(1&2):4,17(3):4,17(4):4

Executive Reports 17(1&2):5-9, 17(3):5-12, 17(4):5
- President's Report 17(1&2):5, 17(3):5, 17(4):5
- Secretary's Report 17(1&2):6, 17(3):6, 17(4):6
- President-Elect's Report 17(4):7
- New WAVMA Members 117(1&2):8, 7(3):7,
- Directors' Reports 17(3):8-9
- Website Report 17(3):10-11, 17(4):14-15
- WAVMA's Member Programs and Services 17(3):11 17(4):15
- Executive Board Responsibilities 17(1&2):9, 17(3):12, 17(4):13
- WebCEPD Program 17(1&2):9, 17(3):12, 17(4):13
- Announcing the ABVP-Fish Specialty 17(1&2):7, 17 (3):12, 17(4):13
- WAVMA Participation and Contribution to the EAFP XXI International Conference 17(4):8-10
- Annual General Meeting Report 17(4):11
- WAVMA 2024 Executive Board 17(4):12

Committee Reports 17(1&2):10-30, 17(3):13-30, 17(4):16-30
- Join a WAVMA Committee 17(1&2):10, 17(3):13
- WAVMA Committees 17(1&2):10, 17(3):13, 17(4):7
- Credentialing Committee 17(1&2):12, 17(3):14, 17(4):16
- Certified Aquatic Veterinarians 17(1&2):12-13, 17(3):14-15, 17(4):16-17
- Choosing a Mentor for CertAqV/CertAqVNT 17(1&2):14, 17(3):16
- Meetings Committee 17(1&2):11, 17(3):17, 17(4):18
- Fellows Advisory Council 17(1&2):11, 17(3):17, 17(4):19
- WAVMA Fellows 17(1&2):11, 17(3):17, 17(4):19
- Upcoming Joint WAVMA/WAS Activities 17(1&2):15
- WAVMA Student Chapters 17(1&2):16, 17(3):18, 17(4):20
- WAVMA Student Chapter Reports:
  - St. Matthews WAVMA Student Chapter 17(1&2):17
  - Bristol Veterinary School, UK 17(4):22
  - University of Calgary, Canada 17(4):22
  - Murdoch University, Australia 17(4):23
  - Onderstepoort Aquatics Club, Pretoria, South Africa 17(4):26-27
- Education and Student Committee 17(3):19, 17(4):21
- WAVMA Student Chapter Mini-Grant 17(3):19
- John L. Pitts Aquatic Education Award information 17(1&2):18, 17(3):19, 17(4):21
- John L. Pitts Aquatic Education Award Reports:
  - Greta Doden, DVM 17(1&2):19
  - Brian Anton 17(1&2):20
  - Maribel Escobedo 17(1&2):21
  - Nathan Ma 17(3):20-22
  - Maria-Antonia Minea 17(3):24-25
  - Jamie Slater, DVM 17(4):24
  - Sienna McDonald 17(4):25

Colleague's Connection
- Get Hooked on Fish Medicine, by Christopher Lopresto, VMD, CertAqV 17(2&3):22-23
- Meet Dr. Matthijs Metselaar 17(3):26-27
- In Memoriam: Dr. Raymond F. Sis 17(3):27
- Meet Dr. Gary Marty 17(4):28-29

Aquarium Report
- Acuario Mazatlán, Mexico by Nick Saint-Erne 17(2&3):24-27
- The Museum of Aquarium & Pet History By Gary Bagnall 17(4):33-35

Research and Case Reports
- Investigation of extreme buoyancy disorder in public aquarium held freshwater moray eels (*Gymnothorax polyuranodon*) 17(1&2):28-29
- In My Experience: Microscope Phone Mount By Julius Tepper 17(1&2):30
- Unusual Crustacean Mortality in the North-east of England in 2021 and 2022 17(1&2):31

Review Reports
- Review of the Fish Vetting Crash Course By Dr. Kris Chandroo 17(3):28-31
- Catappa Leaves for Use in Aquaria Compiled by Nick Saint-Erne 17(3):32-34
- Comparing the ABVP-Fish Practice and CertAqV: A history and list of requirements, by Satarah Jackson, DVM 17(4):30-32

Literature Review
- World Aquaculture Data by Xiaowei Zhou 17(1&2):34
- New Book: *Fundamentals of Aquatic Veterinary Medicine* 17(1&2):35, 17(3):36, 17(4):37
- Fish Reproduction Abstracts:
- Optimization of Live Prey Enrichment Media for Rearing Juvenile Short-Snouted Seahorse 17(3):34
- Fish breeding and genetics for improved productivity, profitability and sustainability of small-scale farms 17(3):35
- The Role of Genetics in Fish Breeding and Its Im pact on Production and Meat Quality 17(3):35
- Book Review: *Pathology and Epidemiology of Aquatic Animal Diseases for Practitioners 17(4):*36

2023 INDEX

Grand Rounds Cases
Looking for advice to help a friend's aquatic store, Michael Charney, DVM 17(1&2):32-33
When that Shark Bites, Dr. Veronica Pardini 17(3):37
Encysted Gill trematodes, Dr. Paul Manesis 17(4):38

Aquatic Veterinary CE & PD
AQUAVET Information 17(1&2):36, 17(3):38
International Aquarium Congress 17(1&2):37
WAVMA WebCEPD Program 17(1&2):39, 17(3):39, 17(3):43, 17(4):39 and 41
AAFV Conference Information 17(3):41
Medicine of Aquatics, Amphibians and Reptiles 17(3):42
AQUAVET 2024 Information 17(4):39

Index
The Aquatic Veterinarian 2023 Index 17(4):42-43
The Aquatic Veterinarian Comprehensive Index for selected topics 17(4):44-45

Sponsors
Just Exotic 17(1&2):10, 17(3):7, 17(4):10
WAVMA Shop 17(1&2):11, 17(3):17, 17(4):21
AquaDocs Podcasts 17(1&2):17, 17(3):23, 17(4):31
The Bug Company 17(1&2):35, 17(3):36, 17(4):38
ZooMed Laboratories 17(1&2):40, 17(3):44, 17(4):46



Have a Stellar New Year!

Below:
Sea of Cortez tank in the Warden Aquarium at the Arizona Sonora Desert Museum, Tucson, Arizona. Photograph by Nick Saint-Erne.



2023 INDEX

The Aquatic Veterinarian Comprehensive Index:
Selected Compiled Articles from *Aquatic Vet News* (AVN) and *The Aquatic Veterinarian* (TAV)
[Key = Volume (Issue) Page Number]

Featured Aquariums
Vancouver Aquarium, Canada - AVN 2(4) 21
New York Aquarium, New York - TAV 7(1) 33
Waikiki Aquarium, Hawaii - TAV 7(2) 12
Melbourne Aquarium, Australia - TAV 8(1) 32
Mote Marine Lab and Aquarium - TAV 8(4) 20-21
The Georgia Aquarium, Atlanta, GA - TAV 9(1) 22-26
The Shedd Aquarium, Chicago, Illinois - TAV 9(2)29-30
Monterey Bay Aquarium, California - TAV 9(3) 28-30
OdySea Aquarium, Scottsdale, Arizona - TAV 10(4)32-35
S.E.A. Aquarium, Singapore – TAV 10(4)40-43; 12(4)26-29
National Aquarium, Baltimore, Maryland -11(2)17
A Visit to River Safari, Singapore - 12(1) 20-21
New England Aquarium, Boston, Massachusetts -12(2)23
Dallas North Aquarium, Dallas, Texas – 13(1) 18-21
Florida Aquarium, Tampa, Florida - 13(2) 20-23
South Carolina Aquarium, Charleston, SC - 13(3)20-23
Wildlife World Zoo and Aquarium, Litchfield Park, Arizona– 13(4) 22-25
Arizona-Sonora Desert Museum, Tucson, Arizona – 14(1) 18-23
Sharks at the OdySea Aquarium, Scottsdale, Arizona - 15(1):18-19
Ribeiro Frio Aquaculture Station Tour - 15(3):20-21
LiveAquaria, Rhinelander, Wisconsin - 15(4):20-21
Iguanaland, Punta Gorda, FL - 16(1)24-25
Shark Reef Aquarium, Las Vegas, Nevada -16(3)22-24
Nausicaá Aquarium, France by Komsin Sahatrakul - 16(4)32-37
Acuario Mazatlán, Mexico - 17(2&3):24-27
The Museum of Aquarium & Pet History17(4):33-35

WAVMA Annual General Meeting Reports
Washington, DC, USA - July 18, 2007; AVN 1(1):1-2
Vancouver, BC, Canada - July 27, 2008; AVN 2(3):1-6
Seattle, WA, USA - July 14, 2009; AVN 3(3): 6-7
Athens, Greece - July 14, 2010; AVN 4(3): 26-27
St. Louis, MO, USA - July 18, 2011;
San Diego, CA, USA - August 6, 2012; AVN 6(3): 5
Prague, Czech Republic - September 18, 2013; TAV 7(3): 7, 10-11
Denver, CO, USA - July 24, 2014; TAV 8(3): 4-6
Istanbul, Turkey - September 15, 2015; TAV 9(4): 12-15
San Antonio, Texas USA – August 6, 2016; TAV 10(3):12-13
Targu Mures, Romania - September 13, 2017; 11(3) 14-15
St. Kitts, BWI - November 10, 2018; 12(4) 12-15
Toronto, Canada - July 15, 2019; 13(2) 7 and 16
Virtual AGM - November 7, 2020; 14(4) 10-11
Virtual AGM - December 22, 2021; 15(4):5
University of Pretoria, South Africa - December 2022; 16(4)9-15
Virtual AGM - December 5, 2023; 17(4)11

Index to WAVMA Member Profiles in the Colleagues' Connection and Student Committee Reports
AVN = Aquatic Vet News (2007-2012)
TAV = The Aquatic Veterinarian (2013-2021)
SC = Student Committee Report
Key = Volume (Issue) Page number
Listed in alphabetical order by last name

Donald Abt - 16(3)25
Jessira Amesquita-Sosa - TAV 15(2):16 SC
Carrick Anderson - 16(3)18 SC
Brian Anton 17(1&2):20 SC
Kurt Arden – TAV 9(3) 20 SC
Barry Baker – AVN 6(1) 6 SC
Kendra Baker – TAV 9(2) 18 SC
Meg Baker – TAV 10(1) 14 SC
Elizabeth Bamberger – TAV 8(4) 19
Wes Baumgartner – TAV 8(3) 17
Brandon Boren – AVN 5(2) 6 SC
Shane Boylan - TAV 13(3) 16-19
Lydia Brown – TAV 8(2)18; TAV 8(3) 18
Alyssa M. Capuano - TAV 12(3) 22 SC
Julie M. Cavin - TAV 11(1) 16
Erica Chang - TAV 15(1)14 SC
Bryony Chetwynd-Glover –TAV 13(3) 24-27 SC
Hui Nee Chin – TAV 8(4) 18 SC
Leigh Clayton - TAV 11(2)16
Annie K. Clift - 16(2)20 SC
Lori Corriveau – AVN 3(1) 7
Brett De Poister – AVN 6(3) 6 SC
Emily Denstedt – AVN 6(2) 6 SC
Sampada Devkota 16(2)13 SC
Jessica Dewar – TAV 8(2) 16 SC
Greta Doden 17(1&2):19 SC
Kyle Donnelly – TAV 7(3) 12 SC
Devon Dublin – AVN 4(2) 9; AVN 4(3) 11; TAV 8(3) 16; TAV 11(3) 12
Azureen Erdman – TAV 14(1) 14-17
Maribel Escobedo 17(1&2):21 SC
Mohamed Faisal – TAV 9(4) 24
Susan Fogelson – TAV 8(3) 14 SC
Ari Fustukjian - TAV 13(2) 18-23
Ian Gardner – AVN 5(3) 13
Joe Gaydos – TAV 10(4)21
Michelle Greenfield - 16(3)16 SC
John Griffioen - 10(3) 15 SC
Chad Harris – TAV 8(3) 18; TAV 9(4) 25
Leighanne Hawkins - TAV 13(4) 19
Ashley Heard-Ganir – TAV 9(4)20 SC
Nora Hickey – TAV 8(1) 16-17 SC; TAV 9(4) 21 SC
Rob Hildreth – AVN 2(3)29
Nicole E. Himebaugh—TAV 12(3) 20 SC
Elizabeth Hodges – TAV 8(3) 14-15
John Howe – AVN 6(2) 10; TAV 13(2) 17
Sara Huckabone – TAV 8(2) 15 SC
Ericka Johnson - TAV 15(2):22-23
Sharmie Johnson – TAV 13(4) 20-21
Colin Johnston – AVN 3(3) 11

2023 INDEX

Timothy Jones – AVN 5(1) 9 SC
Kirstin Kamps – AVN 4(4) 6, SC; AVN 5(1) 7 SC;
Myron Kebus – AVN 2(4) 14-15; TAV 7(4) 12-13
David Kestenman – AVN 5(1) 18-19
Sangwha Kim – TAV 10(2) 18 SC
Ashley Kirby – TAV 9(3) 18 SC
Kristina "Krisy" Kelley 16(1)16 SC
Sarah Knowles – TAV 9(3) 23 SC
Laura Krogman - TAV 15(1)16 SC
Manuel Kunzel - TAV 12(3) 18-19 SC
Austin Leedy – TAV 8(1) 10-12
Veronique LePage – AVN 5(1) 8 SC
Greg Lewbart - 16(1)20-21
Barbara Linnehan – TAV 8(4) 16 SC
Noelle Litra – TAV 9(2) 19 SC
Eric Littman – TAV 9(1) 16 SC
Richmond Loh – TAV 7(3) 14-17; TAV 10(2): 23-25
Shelby L. Loos – TAV 9(4) 18-19 SC
Christopher Lopresto 17(2&3):22-23
Nathan Ma 17(3):20-22 SC
Terra MacDonald – TAV 14(2) 18-19
Doug Mader – TAV 10(3) 18-19
Gary Marty 17(4):28-29
Sarah McConnachie -12(2) 18-19 SC
Sienna McDonald 17(4):25 SC
Christina McKenzie - 10(3) 16-17 SC
Peter Merrill – AVN 5(2) 12-15; TAV 10(2) 19
Matthijs Metselaar 17(3):26-27
Tim Miller-Morgan – AVN 2(3) 29; AVN 2(4) 13-14; AVN 4(4) 11
Maria-Antonia Minea 17(3):24-25 SC
Pablo Morón-Elorza 16(4)28-29 SC
Timothy Mullican – TAV 9(1) 22-26
Jenny Munhofen – TAV 8(2) 14 SC
Michael Murray – TAV 9(3) 28-30
Ross Neethling – TAV 9(3) 21 SC
Nicole Nietlisbach - TAV 12(1) 16-19 SC
Brian Palmeiro – AVN 3(2) 8
Samara Parker – AVN 5(3) 5 SC
Anna Penacchi – TAV 10(2) 17 SC
Kaylee Perry – TAV 9(3) 22 SC
Ayanna Phillips Savage - TAV 15(1):20
John Pitts – AVN 3(4) 1; AVN 4(1) 7; TAV 10(2) 13
Caryn Poll – TAV 7(3) 9 CR
Jena Questen – AVN 3(1) 1; TAV 8(1) 14-15; TAV 11(3) 12
Stephen Reichley – AVN 6(3)10; TAV 8(2)12 SC; TAV 11(3)12; 16(3)26-27
Emi Retter 16(4)30 SC
Nuno Ribeiro - TAV 15(3):22-23
Julianne Richard – TAV 9(4) 22-23 SC
Christine Richey – TAV 9(3) 22 SC
Dr. Sam Ridgway -16(2) 22-23
Helen Roberts – AVN 2(4) 14; AVN 6(1)10-11; TAV 12(3)15
Ronald Roberts – AVN 5(4) 12-13; TAV 12(1) 14-15
Abe Robinson – TAV 8(4) 20-21
Hamish Rodger –TAV 11(1) 16
Jenna D. Roseman – TAV 9(2) 21 SC
Nick Saint-Erne – TAV 7(1)12-13; TAV 7(2)12; TAV 8(3)16; TAV 11(3)12; TAV 14(4)24-25
Elizabeth St. Germaine – TAV 13(3) 28-29 SC
Jessie Sanders – TAV 10(1) 15-17
Maya Sawyers – TAV 7(4) 11 SC
A. David Scarfe – TAV 10(2) 20-22
Karissa Sciacca – TAV 8(2) 16 SC
Danielle Scott - 16(2)16 SC
Najim Sekh – TAV 9(2) 20 SC
Sunita Shrestha -TAV 13(4) 16 SC
Wesley Siniard – TAV 8(3) 12 SC
Raymond F. Sis 17(3):27
Jamie Slater, DVM 17(4):24 SC
Maural Sowlat 16(2)14 SC
Justin Stillwell – TAV 9(1) 17 SC
Megan Strobel – TAV 10(2) 16 SC
Helen Roberts Sweeney - TAV 12(3) 15
Julius Tepper – AVN 5(3) 12-13; TAV 14(3) 18-21
Sharon Tiberio – TAV 8(3) 17
Laura-Daniela Urdes – TAV 7(4) 14-15; TAV 8(3) 18; TAV 12(2)14
Jonas Vaitkus – AVN 5(1) 10-11 SC
Bill Van Bonn – TAV 9(2) 29
Jake Veilleux - 16(2)18 SC
Vasile Vulpe - TAV 11(4) 14-15
Zac Waddington – TAV 8(4) 17 SC
Chris Walster – TAV 7(2) 10-12
Holly Ward — TAV 13(4) 14 SC
Scott Weber – AVN 3(4) 9; AVN 6(4) 10-13;
Tatiana Weisbrod - TAV 11(1) 14-15 SC
Peter Werkman – TAV 9(3) 26-27; TAV 10(4) 20
Jill Western, DVM 16(4)26-27 SC
Sophie Whoriskey – AVN 5(4) 5 SC
Jen Wilson-Cohen – TAV 8(3) 13 SC
Hillary A. Wolfe – TAV 9(2) 18 SC
Courtney Wright (WDFW) - TAV 12(2) 20-21 SC
Courtney Wright (IDFG) - TAV 12(2) 22-23 SC
Sarah Wright - TAV 12(1) 19-20 SC; TAV 13(4) 15 SC
Kathryn Ziegner -TAV 13(2) 24-25 SC
Josh Zlotnick -TAV 12(3) 21 SC



WAVMA SPONSORS

