AQUAVET®
Background Information

- Some history:
  - Penn professor saw need for trained aquatic veterinary professionals to contribute to the health/welfare of aquatic animals and their environment
  - AQUAVET® was created
  - Invited Cornell to join as co-sponsor
  - First Class was in 1977

- AQUAVET®
  - Sponsored principally by Penn 1977-2014
  - Sponsored principally by Cornell since 2015
Course Information

Four opportunities available:

- **AQUAVET® I**
  - Introduction to Aquatic Veterinary Medicine
  - 4 week course

- **AQUAVET® II**
  - Comparative Pathology of Aquatic Animals
  - 2 week course

- **AQUAVET® III (not every year)**
  - Clinical Aspects of Captive Aquatic Animal Medicine
  - 5 week course

- **AQUAVET® Summer fellowship**
  - Usual Location: Dr. Hélène Marquis Lab at Cornell
  - Usual Topic: a selected fish viral disease
  - Duration: 8 weeks
AQUAVET®
Course Combinations

- Is it possible to take more than one course a year?
  - Yes
  - AQUAVET® I & AQUAVET® II – overlap
  - These combinations are possible in a year:
    - AQUAVET® I & AQUAVET® III
    - AQUAVET® II & AQUAVET® III
    - AQUAVET® I & AQUAVET® Summer Fellowship*
    - AQUAVET® II & AQUAVET® Summer Fellowship*

* Note – only 1 Summer Fellowship awarded per year but can apply to it as well as AQUAVET® III
Roger Williams University - Bristol, RI

- Classrooms and labs
- Library

Tuition covers course work, housing, field trips and practically all meals

Housing – suites with kitchen and 2 bedrooms
- 4 students per suite (2 per bedroom)
- you will have a roommate
- no pets permitted

Meals – cafeteria meal plan
- Breakfast, lunch, dinner
- 5-10 stations
Location  Bristol, R.I.

20 min to:
Newport
Or
Providence
Bristol, R.I.

Just 1-1.5 hours to:
- Boston
- Mystic
- Barnstable
RWU Campus
Marine and Natural Sciences Building
COURSES at RWU

AQUAVET® I:
An Introduction to Aquatic Veterinary Medicine

4 weeks: total immersion course
24 May to 20 June 2015
22-24 Students
Approx. 40-44 invited faculty

AQUAVET® II:
Comparative Pathology of Aquatic Animals

2 weeks: total immersion course
24 May to 6 June 2015
10-18 students
Approx. 14-16 invited faculty
AQUAVET® I
Introduction to Aquatic Veterinary Medicine

- Four weeks – May 24 and ends June 20
- Classes routinely five and one half days a week (and most evenings)

- Water Quality
- Invertebrates to marine mammals
- Lectures and laboratory sessions
- Student seminars
- Field trips
AQUAVET® I
Introduction to Aquatic Veterinary Medicine

Invertebrates to marine mammals

- Aquatic invertebrates
- Fish
- Amphibians and Reptiles
- Sea Turtles
- Aquatic Birds
- Marine Mammals
AQUAVET® I

Field trips

- Intertidal Invertebrate Collecting
- Fish Hatchery
- Shellfish Hatchery
- Mystic Aquarium
- New England Aquarium
- Atlantis Marine World
- Riverhead Foundation for Marine Research and Preservation
- WHOI (Woods Hole Oceanographic Institute)
AQUAVET® I

- **Student Tuition** $2,250
  - Less $200 from anonymous donor = $2,050
- **Includes**
  - Tuition
  - Room and board (practically all meals) - 4 weeks
  - Field trips

- **Required to attend class**
  - Foundation covering 2/3 of actual cost

- **Vet school credits (depends on school)**
  - Evaluation based on
    - Participation in all aspects of the course
    - Especially student seminars
Tuition and comparisons

- **AQUAVET® I** - 4 weeks for $2,250 - $200 = $2,050
  - about $500/week – includes:
    - Tuition
    - Room and Board (practically all meals)

- **MarVet** – 2 weeks for about $2,000
  - About $1,000/week – includes:
    - Tuition
    - Room and Board - but only a few meals

- **SeaVet** – about $460 for 10 days
  - About $325/week – includes:
    - Tuition
    - NO Room and Board (all extra) and only occasional meals
AQUAVET® I

- **Non-student Tuition** $3,600
  - *Includes*
    - Tuition
    - Room and board (practically all meals) - 4 weeks
    - Field trips

- **Required to attend class**
  - Foundation covering majority of actual cost

- **Continuing Education Credit possible**

- **NOTE:** Residents and Interns pay student price
Scenes from AQUAVET® I
Interacting with Faculty Networking
Student seminars

- 25-30 minute
- PowerPoint
- Topics
  - Invertebrates to marine mammals
  - Marine plants
  - Ecology
- prepare early
Piping Plover

- Small shore bird:
  - Adults ~55 g and 6-6.5 inches tall
- Sandy-colored feathers with grayish-brown crowns and backs
- White foreheads
- Dark, incomplete rings encircle their thick, horn-like bills

Anesthesia in sharks

By Marilyn McDowell V10
Cummings School of Vet Med at Tufts University (TCSVM)

Why Are Fish Important As Patients?

- We are veterinarians
- Fish as food
- Fish as a research tool
- ~$500 million/year spent on ponds/aquaria
- Variety:
- 80% of fish owners own other pets
Unihemispheric Sleep in the Dolphin, *Tursiops truncatus*

Aquavet I
Lauren Sechler

Leafy Sea Dragons
*Phycodurus eques*

Katie Seeley
DVM Candidate
Cornell University
Class of 2011

Amebocytes found in Gorgonian Sea Fans

Katharine Holder
North Carolina State University
College of Veterinary Medicine

The Body Language of Cuttlefish

Melissa Vetter
Aquavet I
Amphibians and the Controversy of the Effects of Exposure to Atrazine

Presented by: Mónica Mayol-Sabatier
University of Pennsylvania
School of Veterinary Medicine
VMD candidate Class of 2013
mmayol@vet.upenn.edu

Effects of Underwater Noise Pollution on Marine Mammal Health

Nicole Budzinski
University of Pennsylvania
School of Veterinary Medicine
Class of 2014

Endoscopic Evaluation of Gender and Gonad Development for Use in Sturgeon Conservation

Wade Edwards
The University of Georgia
College of Veterinary Medicine
DVM Candidate, Class of 2014
bwade.edwards@gmail.com

Aquaculture in Norway

Solveig Kvinge Stavenjord
AQUAVET I
June 17, 2011
AQUAVET® II
Comparative Pathology of Aquatic Animals

FOCUS

Pathology and Pathogenesis of diseases
• of important aquatic invertebrates and fish
• biomedical research models
• cultured species
AQUAVET® II
Comparative Pathology of Aquatic Animals

- Prerequisites: AQUAVET® I or equivalent
- Two Weeks – May 26 to June 6
- Classes 5.5 days a week and most evenings

- Lectures, slide review, and occasional wet labs
  - Primarily Fish and Invertebrates
  - Comparative Anatomy
  - Parasites
  - Bacterial, Viral and Fungal Diseases
  - Toxicology
  - Histopathology
AQUAVET® II

- **Student Tuition - $1,350**
  - Includes course instruction and room and board

- **Required to Attend Classes**
  - Foundation covering 2/3 of cost

- **Course credits available (depends on school)**

- **Evaluation**
  - Based on class participation
AQUAVET® II

- Non-student Tuition - $2,100
  - Includes course instruction and room and board

- Required to Attend Classes
  - Foundation covering 2/3 of cost

- Continuing Education credits available

- NOTE: Interns and Residents pay student price
Several Wet Labs in AQUAVET® II
AQUAVET® II - Lots of Microscope Work
Whale Watch
(optional)

Humpback Whale

Finback Whale

Finback Whale

Finback Whale
AQUAVET® Summer Fellowship

- Research project under guidance of AQUAVET® faculty
- 8 week duration (July and August)
- Aquaculture Based Project (funding requirement)
- Limited positions – usually 1
- Pays limited stipend $1,500 plus living expenses reimbursement
- Publication often generated at the end of project
APPLICATION PROCESS

Application forms  www.aquavet.info

Down-load the application form
MS Word and pdf formats available

Must Submit  Electronically

APPLICATIONS DUE  15 Jan 2015
APPLICATION PROCESS

What you need to submit:

1. The application form
2. Undergraduate transcripts (official)
3. Veterinary school transcript (official)

NOTE: If applying to AQV2 and took AQV1, it is not necessary to resubmit undergraduate transcripts only the updated veterinary school transcript.
APPLICATION PROCESS

What you need to submit:

1. The application form
2. Undergraduate transcripts (official)
3. Veterinary school transcript (official)

NOTE:
PENN and CORNELL STUDENTS. I can obtain the veterinary school transcripts, so you only need to supply the official undergraduate transcripts.
APPLICATION PROCESS

Where to submit:

To:

Dr. Donald W. Stremme
AQUAVET® Director
aquavetmail@gmail.com
APPLICATION PROCESS

The application process is competitive

What does the admissions committee look for?

- An indication that you will use the information in the future
- What have you done in the past in the aquatic sciences
  and/or aquatic animal medicine…..
  and/or even other exotic animal work

Formal courses
Other courses
Paid and volunteer work experience
Other: e.g. hobbies (keep aquarium fish)
Membership: IAAAM, WAVMA, AAFV, AAZV, ARAV, etc.

Application form ESSAY

Why you think you will benefit from the course.
Probably the most important part of the application.
Follow the instructions regarding length of your essay.
Further information

- Website: www.aquavet.info
- Contact Information
  Donald W. Stremme, VMD
  (609) 350-3044
  aquavetmail@gmail.com
AQUAVET®III Information

AQUAVET®III in 2015 is still tentative
(based on procuring the funding)
Still, including this information and accepting applications
AQUAVET® III Last Day

2013 class
AQUAVET® III

- **3 Venues**
  - Georgia Aquarium, Atlanta, GA
  - University of Georgia, Athens, GA
  - Dolphinaris Facilities, Cancún, México

- **Dates**
  - June 22\textsuperscript{nd} to July 25\textsuperscript{th} - 5 weeks

- **Evaluation based on**
  - Participation in all aspects of the course
  - Also Case Reports
AQUAVET® III

Prerequisites
- AQUAVET® I – or equivalent

Class Size
- 6-8 students

Not Included
- Transportation to and from Atlanta
- Airfare to Cancún and from Cozumel
- Some lunches and dinners
AQUAVET® III

- Georgia Aquarium
  - 2 Weeks – Mon through Sat
  - 2-4 hours lecture per day
  - Hands on care with veterinary staff
    - Marine Mammals – Belugas, Pinnipeds, Dolphins
    - One of the Largest Tanks in the World
    - Fish including Elasmobranchs – Whale Sharks, Manta Rays
    - Penguins and other birds
    - Sea Turtles and other reptiles
Scenes from AQUAVET® III
AQUAVET® III

- University of Georgia
  - 3rd week
  - AM lectures
  - PM Rigid Endoscopy
    - Turtles
    - Fish
  - Fish Surgery
  - Lectures and Student Case Reports
Student Case Reports

- Aquarium Cases
- 55 minutes
- PowerPoint
- Preparation – first 2 weeks
- Presentation – 3rd week
AQUAVET® III

- **Dolphinaris**
  - ALL Dolphin Medicine – 3 species
  - 2 Weeks – Mon through Sat
  - 3 Venues
    - Cancún
    - Playa del Carmen
    - Cozumel
  - Days are a mix of lectures and hands-on activities
Dolphinaris

- Sampling of Lecture Topics
  - Dolphin Medicine and Physiology
  - Nutrition
  - Reproduction
  - Importance of Training
  - Endoscopy
  - Ultrasound
  - Hematology and Cytology
Dolphinaris

- Sampling of Hands On Training
  - Blood Collection and Hematology
  - Chuff Collection and Cytology
  - Semen Collection and Analysis
  - Endoscopy
  - Ultrasound
Learning to do dolphin examinations in a beautiful location.
Learning some training techniques
Learning to process and analyze biological samples.
Learning ultrasound, first in the lab and then in the pool.
3 days in the water doing ultrasound
Learning how to use a flexible endoscope.
AQUAVET® III

- **Tuition** - $3,700 ($4,800 Non-student)
  - **Includes**
    - Tuition
    - Room and most meals - 5 weeks

- **School Credit or C.E. are possible**
  - **Evaluation based on**
    - Participation in all aspects of the course
    - Also Case Reports
APPLICATION PROCESS

Application forms [www.aquavet.info](http://www.aquavet.info)

Download the application form

MS Word and pdf formats available

Must Submit **Electronically**

APPLICATIONS DUE **15 Jan 2015**
APPLICATION PROCESS

What you need to submit:

1. The application form
2. Undergraduate transcripts (official)
3. Veterinary school transcript (official)
APPLICATION PROCESS

Where to submit:

To:

Dr. Donald W. Stremme
AQUAVET® Director
aquavetmail@gmail.com
Further information

- Website  [www.aquavet.info](http://www.aquavet.info)

- Contact Information

  Donald W. Stremme, VMD
  (609) 350-3044
  [aquavetmail@gmail.com](mailto:aquavetmail@gmail.com)