AQUAVET®
Background Information

- **Need for trained veterinary professionals**
  - contribute to the health/welfare of aquatic animals and their environment
  - Began in the spring of 1977

- **Historically sponsored by**
  - University of Pennsylvania
  - Cornell University
AQUAVET®
Course Information

Four opportunities

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

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

- **AQUAVET® III**
  - Clinical Aspects of Captive Aquatic Animal Medicine
  - 5 week course

- **AQUAVET® Summer fellowship**
  - Usual Location: Fish Diagnostics Lab at Cornell
  - Usual Topic: a selected fish viral disease
  - Duration: 8 weeks
Logistics – AQUAVET® I & II

- **Roger Williams University - Bristol, RI**
  - Classrooms and labs
  - Library

- **Tuition** covers course work, housing and most meals

- **Housing** – suites with kitchen and 2 bedrooms
  - 4 students per suite
  - roommate
  - no pets

- **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
COURSES at RWU

AQUAVET® I:
An Introduction to Aquatic Veterinary Medicine

4 weeks: total immersion course
28 May to 24 June 2017
22-24 Students
Approx. 46 invited faculty

AQUAVET® II:
Comparative Pathology of Aquatic Animals

2 weeks: total immersion course
28 May to 10 June 2017
12-18 students
Approx. 15 invited faculty
Typical Dorm Room
AQUAVET® I
Introduction to Aquatic Veterinary Medicine

- Four weeks – begins May 28 and ends June 24
- 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
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

- **Tuition for Students** - $2,375
  - Less $200 from anonymous donor = $2,175
- **Includes**
  - Tuition
  - Room and board (almost all meals) - 4 weeks

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

- **Credit Available – depending on school**
  - Evaluation based on
    - Participation in all aspects of the course
    - Especially student seminars
AQUAVET® I

- **Tuition** - $2,375 - $200 = $2,175

- Compare:

  - **AQUAVET® I** – 4 weeks
    - about $600/week - Includes
    - Tuition
    - Room and board (practically all meals)

  - **MarVet** – 2 weeks for about $2,000
    - About $1,000/week
    - Includes only some meals

  - **SeaVet** – about $490 for 10 days
    - About $345/week
    - Includes only some meals
    - Doesn’t include housing
Scenes from AQUAVET® I

(photos – Robert Maze)
STUDENTS & FACULTY
Interacting with Faculty

Networking
Not All Fun and Games
• Classes
  • routinely five and one half days a week
  • (and most evenings)
• Required to Attend Class
  • 8 am to noon
  • 1 pm to 5 pm
  • 6:30 pm to 8:30 pm or later
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 backs
- Short, stubby bills

Anesthesia in sharks

By: Marilyn McDowell V’10
Cummings School of Vet Med at Tufts University (TCSVMed)

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
Amblyrhynchus cristatus
Galapagos Marine Iguana - Marine Iguana - Sea Iguana

Cassie Bolton
Aquavet I 2006
Kansas State University
cbolton@vet.ksu.edu

Natural History of the Octopus

Presented by
Alexandra Outlaw, D.V.M.

Koi Herpesvirus

May 27, 2004
Isadora Marion

Manatee Biology

Barbara Carver
NCSU College of Veterinary Medicine
Aquavet I
March 30, 2006
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 28 to June 10
- 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 - $1,425**
  - Includes course instruction and room and board

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

- **Course Credit possible**
  - Depends on school requirements

- **Evaluation**
  - Based on class participation
Scenes from AQUAVET® II
AQUAVET® II - Lots of Microscope Work
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
AQUAVET® III 2016 finishes at Dolphinaris in Cozumel, México
AQUAVET® III

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

Dates
- June 25<sup>th</sup> to July 30<sup>th</sup> - 5 weeks

Credit Available – depends on school
- 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 meals
Georgia Aquarium

- 2 Weeks – Mon through Sat
- 2-4 hours lecture per day
- Hands on care with veterinary staff
  - Marine Mammals – Belugas, Pinnipeds, Dolphins, Otters
  - Largest Tank in USA – one of largest in the World
  - Fish including Elasmobranchs – Whale Sharks, Manta Rays
  - Penguins and other birds
  - Sea Turtles, Crocodillians and other reptiles
AQUAVET® III

- University of Georgia
  - 3rd week
  - AM lectures
  - PM 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
Dolphinaris

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

Sampling of Lecture Topics

- Dolphin Medicine and Physiology
- Nutrition
- Reproduction
- Importance of Training
- Endoscopy
- Ultrasound
- Hematology and Cytology
Dolphin®

- Sampling of Hands On Training
  - Blood Collection and Hematology
  - Chuff Collection and Cytology
  - Semen Collection and Analysis
  - Endoscopy
  - Ultrasound
AQUAVET® III

- **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.
Not all Work and No Play
AQUAVET® III

- **Tuition** - $3,900 ($4,950 Non-student)
  - Includes
    - Tuition
    - Room and majority of board - 5 weeks
  - $7,900 is actual tuition (which doesn’t cover all costs)
  - $4,000 paid by anonymous donor
  - Additional funds paid by anonymous foundation
    - (to help keep tuition and expenses lower)

- **Course Credit Available**
  - **Evaluation based on**
    - Participation in all aspects of the course
    - Also Case Reports
APPLICATION PROCESS

Application forms  www.aquavet.info

Down-load the application form
MS Word and pdf

Please Submit **Electronically**

APPLICATIONS DUE 15 Jan 2017
APPLICATION PROCESS

What you must submit:

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

NOTES:
- If applying for more than one course, need to submit application for each, however, only one set of transcripts
- If applying for a second year (e.g. AQV2 or AQV3), only the updated veterinary school transcript is required (and application)
- Veterinary school transcript must include recent work (fall of the year before application due)
- CV accepted but NOT required
- Letters of recommendation accepted but NOT required
- Transcripts must be official copies sent directly to the director
  - Transcripts should be sent electronically by the university to the director
  - Paper transcripts are problematic, but IF NECESSARY will be accepted at director’s address
APPLICATION PROCESS

Where to submit:

Should be electronic: aquavetmail@gmail.com

If transcripts must be sent by mail:

Donald W. Stremme, V.M.D.
AQUAVET® Director
Cornell University
College of Veterinary Medicine
Microbiology and Immunology
C5181 Vet Medical Center
Ithaca, NY 14853
APPLICATION PROCESS

- Applications due Jan 15, 2017

- Application forms - website
  - Via E-mail as PDF file preferred

- **Essay** - highlight any aquatic experience
  - Can be separate word document
  - This is most important part of your application

- Acceptance to the program
  - Competitive Basis
  - Announced in February
APPLICATION PROCESS

The application process is competitive

What does the admission 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.
Proof read it.
Further information

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

- **Contact Information**

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  *(609) 350-3044*
  *aquavetmail@gmail.com*