

AQUAVET®



A Program in Aquatic Veterinary Medicine
www.aquavet.info

2019 Schedule for AQUAVET® I

Locations:

Marine and Natural Sciences Building = MNS
Lecture rooms: MNS 200, MNS 210, MNS 213
Labs: MNS 103, MNS 107, MNS 203

Sunday, 26. May 2019

12:00–13:30 Registration – Check–In
Bayside Apartments

14:00 Orientation
MNS 200 Directors

15:00 RWU Required Safety Lecture
MNS 200 Caitlin Conley

16:00 Ecology, Natural History, Physiology, Anatomy of Marine Invertebrates
MNS 210 Dr. Robert Maze – Marinetics, Inc.
AQUAVET® Associate Director

18:30 Ecology, Natural History, Physiology, Anatomy of Marine Invertebrates
MNS 210 (continued)
Dr. Maze

19:30 **Welcome to AQUAVET Party**
Dorm Courtyard Area (weather permitting)

Monday, 27. May 2019 – Memorial Day

8:00 **Rocky Intertidal Invertebrate Collecting** **LOW TIDE 8:45**
leave from MSN 103 (dress appropriately – will be outside and in water)

10:00 Ecology, Natural History, Physiology, Anatomy of Marine Invertebrates
MNS 210 (continued)
Dr. Maze

13:00 Ecology, Natural History, Physiology, Anatomy of Marine Invertebrates
MNS 210 (continued)
Dr. Maze

15:00 **Invertebrates – WET LAB – (need dissection kit, lab coats)**
MNS 103 Dr. Maze

18:00 **Invertebrates – WET LAB – (continued)**
MNS 103 Dr. Maze

NOTE: re-starting lab at 6pm – instead of 6:30pm

*2019 Schedule for AQUAVET® I***Tuesday, 28. May 2019**

- 8:00
MNS 210 History of Fishes: Taxonomy from an Evolutionary and Ecological Perspective
Dr. Roy Yanong – U FL – Tropical Aquaculture Laboratory
- 10:00
MNS 210 Fish Anatomy – Structure and Function
Dr. Yanong
- 13:00
MNS 210 Fish Anatomy – Structure and Function (continued)
Dr. Yanong
- 14:00
MNS 103 **Fish Diagnostics and Techniques WET LAB**
(need dissection kit, lab coats)
Dr. Yanong
Dr. Rod Getchell – Cornell University
AQUAVET® Associate Director
- 15:00
MNS 103 **Fish Anatomy – Structure and Function WET LAB**
(need dissection kit, lab coats)
Drs. Yanong and Getchell
- 18:30
MNS 210 Anatomy, Diseases and Zoonotic Implications of Marine Invertebrates
Dr. Roxanna Smolowitz – Roger Williams University

Wednesday, 29. May 2019

- 8:00
MNS 210 Fish Anatomy – Structure and Function
Dr. Yanong
- 10:30
MNS 103 **Invertebrates – WET LAB – (need dissection kit, lab coats)**
Dr. Maze
- 13:00
MNS 103 **Invertebrates – WET LAB – (continued)**
Drs. Smolowitz and Maze
- 18:00**
MNS 103 **Invertebrates – WET LAB – (continued)**
Drs. Smolowitz and Maze
NOTE: re-starting lab at 6pm – instead of 6:30pm

Thursday, 30. May 2019

- 8:00
MNS 210 Water Quality
Dr. Laurie Landeau – Marinetics, Inc.
AQUAVET® Associate Director

2019 Schedule for AQUAVET® I

10:30 MNS 210	Fish Physiology Dr. Lysa Posner – NC State University
13:00 MNS 210	Historical Aspects of the AQUAVET® Program Dr. Donald Abt – AQUAVET® Founding Director
14:30 MNS 210	Tall Ships Dr. Abt
15:00 MNS 210	Fish Physiology (continued) Dr. Posner
18:30 MNS 210	Fish Physiology (continued) Dr. Posner

Friday, 31. May 2019

8:00 MNS 200	Using Aquatic Animals in Research and the Role of IACUC Dr. Neil Lipmann – Memorial Sloan Kettering Cancer Center
10:00 MNS 210	Life Cycles of Aquarium Raised Fish Dr. Andy Rhyne – Roger Williams University
13:00 MNS 210	Aquatic Immunity Dr. Erin Bromage – University of Massachusetts Dartmouth
16:00 MNS 210	Tides Dr. Abt
18:30 MNS 210	Regulations in Aquaculture Dr. Kathleen Hartmann – USDA APHIS Veterinary Services

Saturday, 1. June 2019

0:00 MNS 203	Microbiology Lab Set Up (lab coats and dissection kits) Dr. Lester Khoo – Mississippi State University AQUAVET® Director Emeritus
9:00 MNS 203	Microbiology – Specimen Necropsy (lab coats and dissection kits) Dr. Khoo
13:00 MNS 210	Selected Bacterial and Viral Pathogens of Fishes Dr. Lester Khoo
15:00	off

2019 Schedule for AQUAVET® I

Sunday, 2. June 2019 – OFF

8:30 leave campus for **OPTIONAL Whale Watch – Barnstable, MA**
 10:00 check in for Whale Watch
 11:00 **OPTIONAL Whale Watch \$40 per person**
 Barnstable, MA

18:00 **AQUAVET® Joint Class Picnic**
 courtyard

Monday, 3. June 2019

8:00 **Selected Bacterial and Viral Pathogens of Fishes**
 MNS 203 **Micro Lab (lab coats and dissection kits)**
 Dr. Khoo

10:00 **Water Quality Lab** (half of the class)
 MNS 103 Dr. Landeau

10:00 Life Cycles of Aquarium Raised Fish – facilities visit (other half of class)
 MNS 210 Dr. Andy Rhyne – Roger Williams University

13:00 **Water Quality Lab** (repeat)
 MNS 103 Dr. Landeau

13:00 Life Cycles of Aquarium Raised Fish – facilities visit (repeat)
 MNS 210 Dr. Rhyne

15:00 Normal Fish Histology
 MNS 210 Dr. Sal Frasca – U FL Aquatic, Amphibian, and Reptile Pathology
 Program, College of Veterinary Medicine

18:30 **Normal Fish Histology – Microscope Lab**
 MNS 103 Dr. Frasca

Tuesday, 4. June 2019

8:00 Pathology and Histopathology of Fish
 MNS 210 Dr. Frasca

11:00 **Pathology and Histopathology of Fish – Microscope Lab**
 MNS 103 Dr. Frasca

13:00 **Pathology and Histopathology of Fish – Microscope Lab (cont)**
 MNS 103 Dr. Frasca

2019 Schedule for AQUAVET® I

14:30 Harmful Algal Blooms
MNS 210 Dr. Chris Gobler – Stonybrook Southampton

18:30 Introduction to Fish Hematology
MNS 210/103 Jill Arnold – Zooquatic Lab

Wednesday, 5. June 2019

8:00 Disease Investigations and Case Reports for Coldwater Fishes
MNS 210 Dr. Lovy – NJ Div of Fish & Wildlife, Office of Fish & Wildlife

9:00 Environmental/Nutritional Disease of Coldwater Fishes
MNS 210 Dr. Lovy

10:00 Student Seminars
MNS 210

- 1 **Xanth El-Sayed** – Lionfish Invasion in the Caribbean; How It Started and Current Status
- 2 **Amanda Vegter**– Life History, Current Status and Conservation Efforts of *Carcharodon charcharias*
- 3 **Daniel Ruvolo** – Slingshot Feeding Mechanism of the Goblin Shark
- 4 **Vince Nicoletta** – Captive Marine Mammal Reproduction

13:00 Viral Diseases of Coldwater Fishes
MNS 210 Dr. Tom Loch – MSU-AAHL, Colleges of Agriculture & Natural Resources and Veterinary Medicine

15:00 Parasitic and Fungal Diseases of Coldwater Fishes
MNS 210 Dr. Lovy

18:30 Reptile Medicine
MNS 210 Dr. Mike Corcoran – Bulger Veterinary Hospital, North Andover, MA

20:30 AQUAVET® I T-shirt LOGO contest
MNS 210 Dr. Landeau

Thursday, 6. June 2019

8:00 Aquatic Birds
MNS 210 Dr. Cindy P. Driscoll – Maryland Department of Natural Resources

11:00 Diseases of Warmwater Aquaculture Fishes – Infectious Diseases
MNS 210 Dr. Sherman Jack – Mississippi State University, CVM

13:00 **Aquatic Birds Anatomy Lab – WEB LAB – (dissection kits, lab coats)**
MNS 103 Dr. Driscoll

2019 Schedule for AQUAVET® I

15:00 MNS 210	Diseases of Warmwater Aquaculture Fishes – Infectious Diseases (con't) Dr. Jack
16:00 MNS 210	Diseases of Warmwater Aquaculture Fishes – Non-Infectious Diseases Dr. Jack
18:30 MNS 210	Diseases of Warmwater Aquaculture Fishes – Non-Infectious Dz (con't) Dr. Jack
19:30 MNS 210	Culture and Health Concerns of Baitfish and Hybrid Striped Bass Dr. Jack

Friday, 7. June 2019

8:00 MNS 210	Challenging Aquarium Cases Dr. Donald W. Stremme – Cornell University AQUAVET® Director
10:00 MNS 210	Corals Dr. Ilze Berzins – One Water, One Health, LLC
13:00 MNS 210	Corals (continued) Dr. Berzins
14:00 MNS 210	Penguins! Dr. Stremme
15:00 MNS 210	Resource Assessment Dr. Russell Brown – National Marine Fisheries Service
18:30 MNS 210	Aquaculture Systems Dr. Rhyne

Saturday, 8. June 2019

8:00 MNS 210	Shrimp Industry Dr. Bob Bullis – Florida Keys Community College Dr. Arun Dhar – University of AZ, Aquatic Pathology Laboratory
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2019 Schedule for AQUAVET® I

13:00 Student Seminars
MNS 210

5 **Annie Clift** – Affects of Climate Change on Olive Ridley Nesting Beaches in the Southern Nicoya Peninsula of Guanacaste, Costa Rica

6 **Matt Sullivan** – The Life Cycle and Reproductive Strategies of Mussel Species

7 **Kristina Kelley** – Aquaponics: Implications for Future Growth

8 **Michelle Barnett** – Toxoplasmosis? Get Otter Here!

15:00 Oyster Culture, Environment, Disease and Nutrition
MNS 210 Dr. Maze

17:00 OFF

Sunday, 9. June 2019

OPEN

Monday, 10. June 2019

8:00 Student Seminars
MNS 210

9 **Tommy Burdette** – Sea Anemone Reproduction

10 **Stephanie Bellinghausen** – General Principles and Challenges in Pinniped Anaesthesia

11 **Lyndsy Gazda** – Amphibians: The Next Big Extinction

12 **Nicole Copeland** – Case Study of the First CSF Tap Performed on a Live Bottlenose Dolphin

10:00 Drugs used in Aquaculture – Regulations, labels, FDA, CVM and
MNS 210 Medicated Feeds
Dr. Emily Cornwell – Muddy Branch Veterinary Center

13:00 Medical Aspects of HABs – and Aquatic Toxicology
MNS 210 Dr. Lisa Murphy – University of Pennsylvania

14:00 (Sea)food Safety – Emphasis on Toxins
MNS 210 Dr. Murphy

15:00 Other Aspects of Aquatic Toxicology and Selected Cases
MNS 210 Dr. Murphy

16:00 Seafood Safety – The Risks of Eating Raw Seafood
MNS 210 Dr. Maze

18:30 Economic Considerations in the Development of Aquaculture Operations
MNS 210 Dr. Landeau

2019 Schedule for AQUAVET® I

Tuesday, 11. June 2019

8:00 Student Seminars
 MNS 210 **13 Danielle Scott** – The Effects of Macro-plastic Pollution on Marine Animals and What You Can Do to Reduce Your Impact
14 Tara Needham – White Spot Syndrome Virus (WSSV) with Special Reference to the Queensland, Australian 2016/17 Outbreak

circa
 10:00 leave RWU for Boston – New England Aquarium
 12:00 estimated arrival time – lunch Faneuil Hall

13:00 New England Aquarium – Behind the Scenes Tours
Dr. Tuxbury and staff

15:00 open time to visit NEAQ on own
 (aquarium closes at 5pm)

17:15 Amphibians!
 NE AQ Dr. Kathy Tuxbury
 Dinner during presentation

Circa
 18:30 drive back to RWU

Wednesday, 12. June 2019

8:00 Biology, Medicine and Surgery of Turtles Including Sea Turtles
 MNS 210 Dr. Charles Innis – New England Aquarium

13:00 **Turtle Necropsy Lab (lab coats, dissection kit)**
 MNS 103 Drs. Innis

16:00 Fish Nutrition
 MNS 210 Dr. Dale Leavitt – Roger Williams University

18:30 Fish Nutrition (continued)
 MNS 210 Dr. Leavitt

2019 Schedule for AQUAVET® I

Thursday, 13. June 2019

Today is overnight trip to Riverhead, NY. Take what you will need with you.

- 6:00 Leave RWU for Riverhead, Long Island, NY
(breakfast on ferry)
- 7:30 Arrive New London Ferry Terminal
they require arrival 30 minutes ahead of departure
- 8:00 Ferry to Orient Point, NY
9:20 or so arrive Orient Point – drive to Riverhead, NY
- 10:30** Atlantis Marine World Aquarium and
Riverhead Foundation for Marine Research and Preservation
- 10:30 RFMRP – Clinical Techniques for Marine Mammals and Aquatic Animals –
WET LAB – Bring Old Clothes or Clothing Covers
Dr. Robert Pisciotta
Dr. Richard Hanusch
Maggie Seiler
Candyce Paparo
Maxine Montello
- 13:00 RFMRP – Clinical Techniques for Marine Mammals and Aquatic Animals –
(continued)
- 18:30 Coral Biology, Husbandry and Propagation
Joe Yaiullo – Atlantis Marine World
- 20:30 Hyatt Hotel – overnight

Friday, 14. June 2019

- 6:30 Hyatt Hotel breakfast
- 7:30 pack, check out and load cars
- 7:45 Leave Riverhead for ferry
- 8:30 arrive at Orient Point, NY
- 9:00 Ferry leaves for New London, CT
- 10:20 arrive New London
- 10:30 arrive at Mystic Aquarium
- 10:30** Mystic Aquarium Tour
Dr. Allison Tuttle et al – Mystic Aquarium and
Institute for Exploration
- 16:15 Leave Mystic for RWU
- 17:45 arrive on campus

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13:45 MNS 210	Marine Mammal Water Quality/Life Support/Environmental Considerations Dr. Field
15:00 MNS 210	Marine Mammals - Clinical Cases Dr. Tuttle
16:00 MNS 210	Student Seminars 23 Sungbin Lee - Finless Porpoise: Past, Present and Future 24 Lindsay Francis - The Giant Pacific Octopus - Captive Husbandry and Welfare
18:30 MNS 210	Large Display Aquaria Dr. Whitaker
20:15 MNS 210	Ethics of Keeping Marine Mammals Under Human Care (discussion) Dr. Whitaker

Tuesday, 18. June 2019

8:00 MNS 210	Marine Mammals - Husbandry and Aquarium/Zoo Management Dr. Calle
9:30 MNS 210	Marine Mammal Clinical Techniques Dr. Calle
10:45 MNS 210	Marine Mammal Special Topics from the Marine Mammal Center Dr. Field
13:00 MNS 210	Marine Mammal Stranding Cases Dr. Whitaker
14:15 MNS 210	Marine Mammal Clinical Cases Dr. Calle
15:45 MNS 210	Marine Mammal Stranding Cases Dr. Sidor
18:30 MNS 210	Marine Mammals - Pathology, Principles of Necropsy, Forensics - "How To" Dr. Sidor

2019 Schedule for AQUAVET® I

Wednesday, 19. June 2019

- 6:00 lv RWU for Woods Hole
- 7:30 Required OSHA training to be in the necropsy lab
Carriage House Misty Niemeyer – Woods Hole Oceanographic Institution
Breakfast during this training
- 8:00 **Marine Mammal Necropsy Lab WET LAB**
WHOI **(need dissection kit – protective clothing will be provided)**
 Consider bring change of clothes for after this lab
 Drs. Sidor, Field, Calle
 Dr. Melissa Joblon – New England Aquarium
- 12:30 Students Present Results of Necropsies for the Group
Carriage House Dr. Sidor leading discussion
- 13:00 lunch
Carriage House
- 13:30 Stranding & What We Can Learn from Strandings, Including Large Whale
Carriage House Strandings and Mass Strandings
 Dr. Sarah Sharp – Woods Hole Oceanographic Institution (WHOI)
- 16:00 leave MBL by this time or earlier
16:15 arrive at MBL and park
16:30 meet at MRC entrance
- 16:30 **Tour of MBL and MRC Facilities**
 Dr. Lisa Abbo, MBL Veterinarian
- 17:30 approx Group Photo and time to explore town
18:30 Dinner at Captain Kidd
20:30 approx depart for RWU
22:00 approx arrive RWU

Thursday, 20. June 2019

- 8:00 Overview of Pet Fish Medicine Including LSS and Water Quality
MNS 210 Dr. Jessie Sanders – Aquatic Veterinary Services
- 10:00 Pet Fish Medicine – Common Diagnostic Techniques
MNS 210 Dr. Sanders
- 11:00 Aquarium World Diagnostics and Selected Aquarium Cases
MNS 210 Dr. Shane Boylan – South Carolina Aquarium

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13:00 MNS 210	Treatments for Fish Diseases in Warmwater Pet Fish: Goiter, Gas Saturation, Trauma, Infectious Diseases, etc. Dr. Boylan
15:00 MNS 210	Selection of Pet Fish Cases Dr. Geoffrey Groockock – Transit Animal Hospital
16:00 MNS 210	Selection of Pet Fish Cases (continued) Dr. Sanders
18:30 MNS 210	Fish Anaesthesia and Surgical Techniques Dr. Groockock

Friday, 21. June 2019

8:00 MNS 103	Fish Surgery Lab – HALF of CLASS no special equipment needed by students wear scrubs or tshirt Drs. Groockock, Boylan and Sanders
8:00 Meet MNS 103	RWU Shellfish Facility Visit (half of the class) Dr. Dale Leavitt – Roger Williams University Robbie Hudson – Roger Williams University
10:00	Both halves switch
13:00 MNS 210	Paths to Success in Aquatics Dr. Ari Fustukjian – The Florida Aquarium
14:00 MNS 210	The Ornamental Fish Industry Dr. Nick Saint-Erne – Certified Aquatic Veterinarian
15:00 MNS 210	Common Koi Problems Dr. Saint-Erne
18:30	AQUAVET®I Clambake

Saturday, 22. June 2019

By 10:00 check out – back to reality