

AQUAVET®



A Program in Aquatic Veterinary Medicine

www.aquavet.info

2023 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, 28. May 2023

11:30–12:30 Registration – Check-In
Bayside
Apartments

13:00 Orientation
MNS 200 Dr. Donald W. Stremme – Cornell University
AQUAVET® Director

14:00 History of AQUAVET®
MNS 200 Dr. Laurie Landeau – Marinetics, Inc.
AQUAVET® Associate Director

15:00 RWU Required Safety Lecture
MNS 200 Caitlin Conley

16:00 An Overview of the Primary Marine Invertebrate Phyla we are Likely to
MNS 210 Encounter
Dr. Robert Maze – Marinetics, Inc.
AQUAVET® Associate Director

18:30 An Overview of the Primary Marine Invertebrate Phyla we are Likely to
MNS 210 Encounter (continued)
Dr. Maze

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

Monday, 29. May 2023 – Memorial Day

8:00 **Rocky Intertidal Invertebrate Collecting** **LOW TIDE 9:41**
leave from MSN 103 (dress appropriately – will be outside and in water)

10:00 Anatomy of Bilvalvia, Crustaceanss, Cephalopoda and Echinodermata as
MNS 210 they Pertain to our Lab
Dr. Maze

2023 Schedule for AQUAVET® I

13:00 Marine Metazoan Parasites and an Introduction to Public Health Issues
MNS 210 (e.g. Anisakiasis), those Parasites likely to be seen in AQUAVET (a plethora, including those of Limulus, Dorytheuthus and in our Marine Mammals labs) and have been researched by AQUAVET students in the past

Dr. Maze

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

18:30 History of Fishes: Taxonomy from an Evolutionary and Ecological
MNS 210 Perspective

Dr. Roy Yanong – U FL – Tropical Aquaculture Laboratory

Tuesday, 30. May 2023

8:00 Fish Anatomy – Structure and Function
MNS 210 Dr. Yanong

10:00 Invertebrates – WET LAB – (need dissection kit, lab coats)
MNS 103 Dr. Maze

Dr. Roxanna Smolowitz – Roger Williams University

Dr. Jennifer Dill – Regeneron

Dr. Alisa Newton –OCEARCH – ZooQuatic Laboratory

13:00 Invertebrates – WET LAB – (continued)
MNS 103 Drs. Dill and Maze

18:30 Invertebrates – WET LAB – (continued)
MNS 103 Drs. Dill and Maze

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

Wednesday, 31. May 2023

8:00 Fish Anatomy – Structure and Function (continued)
MNS 210 Dr. Yanong

13:00 Fish Physiology
MNS 210 Dr. Lysa Posner – NC State University

18:30 Invertebrates – WET LAB – (continued)
MNS 103 (need dissection kit, lab coats)

Drs. Newton, Dill, Maze

2023 Schedule for AQUAVET® I

Thursday, 1. June 2023

- 8:00 **Fish Diagnostics and Techniques LAB**
MNS 103 (need dissection kit, lab coats)
 Drs. Yanong and Getchell
- 9:30 **Fish Anatomy – Structure and Function WET LAB**
MNS 103 (need dissection kit, lab coats)
 Drs. Yanong and Getchell
- 13:00 Fish Physiology (continued)
MNS 210 Dr. Posner
- 15:00 Important Diseases of Marine Invertebrates
MNS 210 Dr. Roxanna Smolowitz – Roger Williams University
- 18:30 Using Aquatic Animals in Research and the Role of IACUC
MNS 200 Dr. Lisa Abbo – Marine Biological Laboratory

Friday, 2. June 2023

- 8:00 Regulations in Aquaculture
MNS 210 Dr. Kathleen Hartmann – USDA APHIS Veterinary Services
 Bill Keleher – USDA APHIS Veterinary Services
- 10:00 Life Cycles of Aquarium Raised Fish
MNS 210 Dr. Andy Rhyne – Roger Williams University
- 13:00 Aquatic Immunity
MNS 210 Dr. Erin Bromage – University of Massachusetts Dartmouth
- 18:30 Water Quality
MNS 210 Dr. Laurie Landeau – Marinetics, Inc.
 AQUAVET® Associate Director

Saturday, 3. June 2023

- 8:00 **Microbiology Lab Set Up (lab coats and dissection kits)**
MNS 203 Dr. Lester Khoo – Mississippi State University
 AQUAVET® Director Emeritus
- 10:00 **Microbiology – Specimen Necropsy (lab coats and dissection kits)**
MNS 203 Dr. Khoo

2023 Schedule for AQUAVET® I

13:00 MNS 210	Student Seminars (Cornell today) 1 Madison Huber – The Biology and Behavior of Orca 2 Kathleen Wendover – Coral Bleaching and Its Impacts on Marine Ecosystems
14:00 MNS 210	Selected Bacterial and Viral Pathogens of Fishes Dr. Lester Khoo
16:00	Elasmobranchs – VIRTUAL Dr. Frasca and Newton
18h30	Elasmobranchs – VIRTUAL (continued) Dr. Frasca and Newton

Sunday, 4. June 2023 – OFF

Morning	OPTIONAL Whale Watch Barnstable, MA
19:00 courtyard	AQUAVET® Joint Class Picnic

Monday, 5. June 2023

8:00 MNS 203	Selected Bacterial and Viral Pathogens of Fishes Micro Lab (lab coats and dissection kits) Dr. Khoo
10:00 MNS 103	Water Quality Lab (half of the class) Dr. Landeau
10:00 MNS 210	Life Cycles of Aquarium Raised Fish – facilities visit (other half of class) Dr. Andy Rhyne – Roger Williams University
13:00 MNS 103	Water Quality Lab (repeat – other ½ of class) Dr. Landeau
13:00 MNS 210	Life Cycles of Aquarium Raised Fish – facilities visit (repeat) Dr. Rhyne
15:00 MNS 210	Normal Fish Histology Dr. Sal Frasca – ZooQuatic, LLC
18:30 MNS 103	Normal Fish Histology – Microscope Lab Dr. Frasca Dr. Emily Reinhardt – University of Connecticut

2023 Schedule for AQUAVET® I

Tuesday, 6. June 2023

- 8:00 Pathology and Histopathology of Fish
MNS 210 Dr. Frasca
- 11:00 **Pathology and Histopathology of Fish – Microscope Lab**
MNS 103 Drs. Frasca and Reinhardt
- 13:00 **Pathology and Histopathology of Fish – Microscope Lab (cont)**
MNS 103 Drs. Frasca and Reinhardt
- 14:30 Student Seminars (Cornell today)
MNS 210
3 Kate Alex – Cuttlefish Physiology and Color Changing Behaviors
4 Natalia Antonsanti-Santana – Nonmammalian/Avian Endothermic Strategies in Aquatic Animals
5 Lauren Salsburg – Sea Turtle Microbiome
6 Sabrina Graham – Bacterial Zoonoses of Marine Mammals
7 Eric Teplitz – Public and Ecosystem Health Impacts of Aquaculture Systems in Kenya
- 18:30 Introduction to Fish Hematology
MNS 210/103 Jill Arnold – Zooquatic Lab
- 19:30 **Fish Hematology – Microscope Lab**
MNS 103 Jill Arnold

Wednesday, 7. June 2023

- 8:00 Disease Investigations and Case Reports for Coldwater Fishes
MNS 210 Dr. Lovy – USGS Western Fisheries Research Center
- 9:00 Environmental/Nutritional Disease of Coldwater Fishes
MNS 210 Dr. Lovy
- 10:00 Student Seminars
MNS 210
8 Erika Mueller – Tetrodotoxin in the Blue-Ringed Octopus
9 Alyssa Ungemach – Reported Reproductive Disorders of Elasmobranchs
10 Thomas LeClair – Falling Stars: Sea Star Wasting Syndrome
11 Kelsie Chisholm – Feeding Mechanism of the Goblin Shark
- 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

2023 Schedule for AQUAVET® I

18:30 Seafood Safety – The Risks of Eating Raw Seafood
MNS 210 Dr. Maze

Thursday, 8. June 2023

8:00 What is Unique about Eye Structure and Sight: From A (Avian)
MNS 210 to Z (Zalophus or Zebrafish)
 Dr. Carmen Colitz – Aquatic Animal Eye Care, LLC

11:00 Marine Mammal Anaesthesia – **VIRTUAL**
MNS 210 Dr. James Bailey – National Marine Mammal Foundation

13:00 Diseases of Warmwater Aquaculture Fishes – Infectious Diseases (con't)
MNS 210 Dr. Jack

15:00 Diseases of Warmwater Aquaculture Fishes – Non-Infectious Diseases
MNS 210 Dr. Jack

18:30 Culture and Health Concerns of Baitfish and Hybrid Striped Bass
MNS 210 Dr. Jack

Friday, 9. June 2023

8:00 Amphibians!
MNS 210 Dr. Kathy Tuxbury – New England Aquarium

10:00 Reptile Medicine
MNS 210 Dr. Jessica Lovstad – Roger Williams Park Zoo

13:00 **Student Seminars**
MNS 210 **12 Wonsoek Lee – Sea Turtle Rehabilitation**
 13 Siobhan Stiimpson – The Impact of Climate Change on Aquaculture

14:00 Corals
MNS 210 Dr. Ilze Berzins – One Water, One Health, LLC

16:00 Aquaculture Systems
MNS 210 Dr. Rhyne

18:30 Aquaculture Systems (continued)
MNS 210 Dr. Rhyne

2023 Schedule for AQUAVET® I

Saturday, 10. June 2023

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

13:00 Student Seminars
MNS 210 **14 Caitlyn Stearns** – The Effects of Plastic Pollution and Microplastics on Marine Animals
15 Autumn Carroll – The Effects of Oil Spills on Aquatic Wildlife
16 Ysanne Michaud-Simard –

14:30 Oyster Culture, Environment, Disease and Nutrition
MNS 210 Dr. Maze

17:00 OFF

Sunday, 11. June 2023

OPEN

Monday, 12. June 2023

8:00 Drugs used in Aquaculture – Regulations, labels, FDA, CVM and
MNS 210 Medicated Feeds
Dr. Emily Cornwell – Food and Drug Administration

10:00 Harmful Algal Blooms
MNS 210 Dr. Chris Gobler – Stony Brook University

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 Student Seminars
MNS 210 **17 Viviana Lee** – Invasive Lionfish
18 Bailey George – Comparative Marine Mammal Neonatal Care

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

2023 Schedule for AQUAVET® I

Tuesday, 13. June 2023

- 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 Dr. Innis
- 16:00 Fish Nutrition
MNS 210 Dr. Allen Davis – Auburn University
- 18:30 Fish Nutrition (continued)
MNS 210 Dr. Davis

Wednesday, 14. June 2023

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

- 8:00 Leave RWU for Mystic, CT
- 9:30 arrive at Mystic Aquarium
- 9:30 **Mystic Aquarium Tour**
 Dr. Allison Tuttle et al – Mystic Aquarium and
 Institute for Exploration
- 15:00 Leave Mystic for New London – must arrive by 15:30
- 15:30 Arrive New London Ferry Terminal
they require arrival 30 minutes ahead of departure
- 16:00 Ferry to Orient Point, NY
17:30 or so arrive Orient Point – drive to Riverhead, NY
- 18:30 arrive Riverhead, NY
- 18:30 Long Island Aquarium tour
- 19:30 Coral Biology, Husbandry and Propagation
 Joe Yaiullo – Atlantis Marine World
- 21:00 Dinner nearby – stay overnight at Hyatt (next to aquarium)

2023 Schedule for AQUAVET® I

Thursday, 15. June 2023

- 6:30 Hyatt Hotel breakfast
7:30 pack, check out and load cars – save clean clothes for trip back
- 9:00 Aquarium Visit – Training Demo – Penguin Exams
Long Island Aquarium and
Riverhead Foundation for Marine Research and Preservation
Dr. Robert Pisciotta
Dr. Richard Hanusch
Maggie Seiler
Candyce Paparo
Maxine Montello
- 12:00 lunch on own
- 13:00 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
- By 16:30 Leave Riverhead for ferry
17:30 arrive at Orient Point, NY
18:00 Ferry leaves for New London, CT
19:20 arrive New London – Dinner somewhere – drive to campus

Friday, 16. June 2023

- 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 – SeaWorld Abu Dhabi
- 13:00 Treatments for Fish Diseases in Warmwater Pet Fish: Goiter, Gas
MNS 210 Saturation, Trauma, Infectious Diseases, etc.
Dr. Boylan
- 15:00 Selection of Pet Fish Cases
MNS 210 Dr. Geoffrey Grocock – Transit Animal Hospital

2023 Schedule for AQUAVET® I

16:00 Selection of Pet Fish Cases (continued)
MNS 210 Dr. Sanders

18:30 Fish Anaesthesia and Surgical Techniques
MNS 210 Dr. Groocock

Saturday, 17. June 2023

8:00 **Fish Surgery Lab – HALF of CLASS**
MNS 103 **no special equipment needed by students**
wear scrubs or tshirt
Drs. Groocock, Boylan and Sanders

8:00 **RWU Shellfish Facility Visit (half of the class)**
Meet MNS 103 Kristen Savastano – Roger Williams University

10:00 Both halves switch

13:00 Zebra Fish Husbandry and Use as Research Model
MNS 210 Dr. Nick Saint-Erne – Certified Aquatic Veterinarian

14:00 Common Koi Problems
MNS 210 Dr. Saint-Erne

16:00 Large Display Aquaria
MNS 210 Dr. Boylan

Sunday, 18. June 2023

OPEN

Monday, 19. June 2023

8:00 Marine Mammals
MNS 210 Dr. Inga Sidor – University of New Hampshire
Dr. Paul Calle – Zool. Health Program, Wildlife Conservtn. Society
Dr. Cara Field – The Marine Mammal Center
Dr. Chelsea Anderson – Mystic Aquarium
Dr. Eric Anderson – Mystic Aquarium

8:00 Important Marine Mammal Legislation, Regulatory Agencies, and Member
MNS 210 Organizations
Dr. Calle

2023 Schedule for AQUAVET® I

9:00 MNS 210	Marine Mammals – Taxonomy, Anatomy, Physiology, Reproduction Dr. Field
10:45 MNS 210	Marine Mammals – Husbandry and Aquarium/Zoo Management Dr. Calle
12:45 MNS 210	Student Seminars 19 Benjamin Rosenbloom – Mycobacteriosis in Fish – Treatable? 20 Sara Jayne Wint – <i>Delphinapterus leucas</i> – Life History and Captive Husbandry
14:15 MNS 210	Marine Mammal Clinical Techniques Dr. Calle
15:30 MNS 210	Marine Mammal Diseases I (Bacterial, Viral) Dr. Field
18:00 MNS 210	Marine Mammal Diseases II (Fungal, Parasitic, Toxins, Misc.) Dr. Field
19:15 MNS 210	Ethics of Keeping Marine Mammals Under Human Care (discussion) Marine Mammal Group

Tuesday, 20. June 2023

8:00 MNS 210	Student Seminars 21 Kim Le – Diagnostic Imaging of Aquatic Animals 22 Samantha Amey-Gonzalez – Whale Sharks
9:15 MNS 210	Marine Mammal Water Quality/Life Support/Environmental Considerations Dr. Calle
10:00 MNS 210	Marine Mammal Reproduction Dr. Anderson
11:00 MNS 210	Marine Mammal Clinical Cases Dr. Calle
13:00 MNS 210	Marine Mammals – Clinical Cases Dr. Anderson
14:30 MNS 210	Marine Mammal Special Topics from the Marine Mammal Center Dr. Field
15:45 MNS 210	Marine Mammal Stranding Cases Dr. Sidor

2023 Schedule for AQUAVET® I

18:30 Marine Mammals – Pathology, Principals of Necropsy,
MNS 210 Forensics – “How To”
Dr. Sidor

Wednesday, 21. June 2023

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. Eric Anderson – Mystic 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 – International Fund for Animal Welfare

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, 22. June 2023

8:00 Student Seminars
MNS 210 **23 Ashley Duncan – Northern Right Whale Conservation**
24 Jérôme Parenteau –

2023 Schedule for AQUAVET® I

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 drive back to RWU

Friday, 23. June 2023

8:00 Aquatic Birds
MNS 210 Dr. Cindy P. Driscoll – Maryland Department of Natural Resources
13:00 **Aquatic Birds Anatomy Lab – WEB LAB – (dissection kits, lab coats)**
MNS 103 **(NOTE: due to HPAI need special PPE this year)**
Dr. Driscoll
Dr. Tuxbury
19:00 **AQUAVET®I Clambake**

Saturday, 24. June 2023

By 10:00 check out – back to reality