



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 RWU Required Safety Lecture
 MNS 200 Caitlin Conley

15:00 History of AQUAVET®
 MNS 200 Dr. Laurie Landeau – Marinetics, Inc.
 AQUAVET® Associate Director

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
MNS 210 Marine Metazoan Parasites and an Introduction to Public Health Issues (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
MNS 103 **Invertebrates – WET LAB – (need dissection kit, lab coats)**
Dr. Maze
- 18:30
MNS 210 History of Fishes: Taxonomy from an Evolutionary and Ecological Perspective
Dr. Roy Yanong – U FL – Tropical Aquaculture Laboratory

Tuesday, 30. May 2023

- 8:00
MNS 210 Fish Anatomy – Structure and Function
Dr. Yanong
- 10:00
MNS 103 **Invertebrates – WET LAB – (need dissection kit, lab coats)**
Dr. Maze
Dr. Roxanna Smolowitz – Roger Williams University
Dr. Jennifer Dill – Regeneron
Dr. Alisa Newton –OCEARCH – ZooQuatic Laboratory
- 13:00
MNS 103 **Invertebrates – WET LAB – (continued)**
Drs. Dill and Maze
- 18:30
MNS 103 **Invertebrates – WET LAB – (continued)**
Drs. Dill and Maze
- 20:30
MNS 210 AQUAVET® I T-shirt LOGO contest
Dr. Landeau

Wednesday, 31. May 2023

- 8:00
MNS 210 Fish Anatomy – Structure and Function (continued)
Dr. Yanong
- 13:00
MNS 210 Fish Physiology
Dr. Lysa Posner – NC State University
- 18:30
MNS 103 **Invertebrates – WET LAB – (continued)**
(need dissection kit, lab coats)
Drs. Newton, Dill, Maze

2023 Schedule for AQUAVET® I

Thursday, 1. June 2023

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

Friday, 2. June 2023

- 8:00
MNS 210 Regulations in Aquaculture
Dr. Kathleen Hartmann – USDA APHIS Veterinary Services
Bill Keleher – USDA APHIS Veterinary Services
- 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
- 18:30
MNS 210 Water Quality
Dr. Laurie Landeau – Marinetics, Inc.
AQUAVET® Associate Director

Saturday, 3. June 2023

- 8:00
MNS **203** **Microbiology Lab Set Up (lab coats and dissection kits)**
Dr. Lester Khoo – Mississippi State University
AQUAVET® Director Emeritus
- 10:00
MNS **203** **Microbiology – Specimen Necropsy (lab coats and dissection kits)**
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 MNS 210	Pathology and Histopathology of Fish Dr. Frasca
11:00 MNS 103	Pathology and Histopathology of Fish – Microscope Lab Drs. Frasca and Reinhardt
13:00 MNS 103	Pathology and Histopathology of Fish – Microscope Lab (cont) Drs. Frasca and Reinhardt
14:30 MNS 210	Student Seminars (Cornell today) 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 MNS 210/103	Introduction to Fish Hematology Jill Arnold – Zooquatic Lab
19:30 MNS 103	Fish Hematology – Microscope Lab Jill Arnold

Wednesday, 7. June 2023

8:00 MNS 210	Disease Investigations and Case Reports for Coldwater Fishes Dr. Lovy – USGS Western Fisheries Research Center
9:00 MNS 210	Environmental/Nutritional Disease of Coldwater Fishes Dr. Lovy
10:00 MNS 210	Student Seminars 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 MNS 210	Viral Diseases of Coldwater Fishes Dr. Tom Loch – MSU-AAHL, Colleges of Agriculture & Natural Resources and Veterinary Medicine
15:00 MNS 210	Parasitic and Fungal Diseases of Coldwater Fishes 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** – Application of Environmental Enrichment in 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 MNS 210	Shrimp Industry Dr. Bob Bullis – Florida Keys Community College Dr. Arun Dhar – University of AZ, Aquatic Pathology Laboratory
13:00 MNS 210	Student Seminars 14 Caitlyn Stearns – Crocodilian Medicine, Husbandry and Dietary Considerations in Captivity 15 Autumn Carroll – The Effects of Oil Spills on Aquatic Wildlife 16 Ysanne Michaud-Simard – Clownfish and Sea Anemones Symbiosis
14:30 MNS 210	Oyster Culture, Environment, Disease and Nutrition Dr. Maze
17:00	OFF

Sunday, 11. June 2023

OPEN

Monday, 12. June 2023

8:00 MNS 210	Drugs used in Aquaculture – Regulations, labels, FDA, CVM and Medicated Feeds Dr. Emily Cornwell – Food and Drug Administration
10:00 MNS 210	Harmful Algal Blooms Dr. Chris Gobler – Stony Brook University
13:00 MNS 210	Medical Aspects of HABs – and Aquatic Toxicology Dr. Lisa Murphy – University of Pennsylvania
14:00 MNS 210	(Sea)food Safety – Emphasis on Toxins Dr. Murphy
15:00 MNS 210	Other Aspects of Aquatic Toxicology and Selected Cases Dr. Murphy
16:00 MNS 210	Student Seminars 17 Viviana Lee – The Living Fossils: Glass Sponges Bioherms 18 Bailey George – Comparative Marine Mammal Neonatal Care
18:30 MNS 210	Economic Considerations in the Development of Aquaculture Operations Dr. Landeau

2023 Schedule for AQUAVET® I

Tuesday, 13. June 2023

8:00 MNS 210	Biology, Medicine and Surgery of Turtles Including Sea Turtles Dr. Charles Innis – New England Aquarium
13:00 MNS 103	Turtle Necropsy Lab (lab coats, dissection kit) Dr. Innis
16:00 MNS 210	Fish Nutrition Dr. Allen Davis – Auburn University
18:30 MNS 210	Fish Nutrition (continued) 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 – Georgia Sea Turtle Center
- 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 – Use of Fish Skin in Treating Burn Wounds in Other Species
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	Marine Mammal Stranding Cases

2023 Schedule for AQUAVET® I

MNS 210 Dr. Sidor

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

Wednesday, 21. June 2023

6:00 Iv 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 and Field
Dr. Eric Anderson – Mystic Aquarium
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 – 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

2023 Schedule for AQUAVET® I

Thursday, 22. June 2023

8:00	Student Seminars
MNS 210	23 Ashley Duncan – Northern Right Whale Conservation 24 Jérôme Parenteau – Whale Communication
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 6pm)
18:00	dinner on own – suggest Faneuil Hall – open until 19:00
19:15	board bus to 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