

Syllabus

QMRA Innovation Institute (QMRA II) 10 days

Day/Time	Topics	Lead Lecturers
Sunday (Jun 30th)	Orientation: Pick up Packets	
Monday (Jul 1st)	Introduction to Statistics and Computer Software	Dr. Mitchell-Blackwood; Eisenberg
10:00	Statistics Workshop: Data Manipulation in <i>Excel</i>	
12:30	(Lunch) Statics Workshop: Introduction to <i>Crystal Ball</i> Introduction to Environmental-Infection-Transmission Models	
6:30	(Dinner) Evening Program Risk and Uncertainty in Water Science	
Tuesday (Jul 2nd)	Overview of QMRA	Drs Rose, Gerba, Haas
8:30	(Breakfast) Instructions for the Day	
9:00	Introduction to QMRA Frameworks and Evolution Water Quality and Health, The Environmental Microbiology Perspective Developing Frameworks Introduction to Group Case Studies	
12:30	(Lunch) Linking Mathematics, Engineering and Microbiology within Water Research (scenarios, data and models). Discussion with Mentors assigned to Case Studies	
6:30	(Dinner)	
Wednesday (Jul 3rd)	Microbiology & Water Research	Drs Rose; Gerba
8:30	(Breakfast) Instructions for the Day Microbes as Hazards Waterborne Disease in the Americas	
12:30	(Lunch) The Water Microbiome use of Genomics in QMRA The QMRA WIKI Knowledge Sharing System Discussions with Lecturers	
6:30	(Dinner)	
Thursday (Jul 4th)	Dose-Response Assessment	Drs. Haas; Mitchell-Blackwood
8:30	(Breakfast) Instructions for the Day	

10:00	Animal Experiments, Human and. Epidemiological Studies
11:00	Dose-Response Models
12:30	(Lunch)
2:00	Monte-Carlo Simulation (Crystal Ball)
	Work on Case studies
6:30	(Dinner)

Friday (Jul 5th)	Exposure Assessment	Drs. Ashbolt; Betancourt; Gerba
8:30	(Breakfast) Instructions for the Day Methods for Detection of Microorganisms Using new Molecular Tools Exercise: False Positive and False Negatives (Specificity and Sensitivity) Exercise: Measuring Microbes (Recovery & Inactivation) Using Persistence Models; Persistence of DNA	
12:30	Fate & Transport Models: Water Distribution (CFD) (Lunch) Work on Case Studies	
6:30	(Dinner) Water Models for Microorganisms	
Saturday (Jul 6th)	Science Career Pathways Retreat	ALL
	Field Trip Mentoring Rotation Discussions See Mentoring Plan	
Sunday (Jul 7th)	Exposure Assessment	Drs. Gurian; Haas; Jimenez
8:30	(Breakfast) Instructions for the Day Maximum Likelihood Fitting Bootstrap Uncertainty Analysis	
12:30	(Lunch) Fate and Transport: Biosolids Tool Recreational Waters: The Beach App Work On Case Studies	
6:30	(Dinner)	
7:30-9:00	Discussions with Lecturers Update QMRAwiki	
Monday (Jul 8th)	Risk Characterization & Decision Science	Drs. Gurian; Mitchell- Blackwood; Eisenberg
8:30	(Breakfast) Instructions for the Day	

	Environmental Infectious Disease Transmission Modeling	
12:30	(<i>Lunch</i>)	
	Decision Science Risk Perception, Communication, and Management	
6:30	(<i>Dinner</i>)	
7:30-9:00	Discussion with Lecturers	
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Tuesday (Jul 9th)	Case Study Working Day	ALL
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8:30	(<i>Breakfast</i>) Instructions for the Day Working on Case Studies	
12:30	(<i>Lunch</i>)	
1:30	Update QMRAwiki	
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Wednesday (Jul 10th)	QMRA Symposium	
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8:30	(<i>Breakfast</i>) Instructions for the Day Presentations of Case Studies	
12:30	(<i>Lunch</i>)	
1:30	Closing and Awarding of Certificates	
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