

Lecture series and symposium schedule: All times are Mountain Standard Time.

Monday, June 23 (Lecture Series Day 1; Grey Rock Room in the Lory Student Center):

Morning:	Arrival in Fort Collins
2:00 p.m.	Welcome and introduction
2:15 p.m.	Fundamentals: Nucleic Acids, DNA Replication, Transcription and Translation and their Application to Assay Development (Kendra Nightingale)
3:00 p.m.	Concepts in Microbial Taxonomy and Diversity and Implications for Molecular Detection (Martin Wiedmann)
3:30 p.m.	Coffee Break and Vendor Exhibits
3:45 p.m.	PCR: Fundamentals and Variations (PCR; Nested PCR; Multiplex PCR; Real-Time PCR; Reverse Transcriptase PCR; Controls and GLPs); Including: Hands-on Primer Design Activity (Sarita Raengpradub)
5:30 pm	Opening Reception (from 5:30 to 6:30 pm); Keynote Address Delivered by Keith Lampel, U. S. Food and Drug Administration “Molecular-based detection of foodborne pathogens (from 6:30 to 7:15 pm); and Dinner (beginning at 7:15 pm) at the Hilton Hotel (425 W. Prospect Road)

Tuesday, June 24 (Lecture Series Day 2, Grey Rock Room in the Lory Student Center):

8:00 am	Assay Validation and Approval, Including Use and Misuse of the Sensitivity and Specificity concepts (Mark Carter)
8:45 am	The Steps Before PCR: Sampling and Enrichment, Concentration Procedures, Compositing, True Real Time PCR without Enrichment (Mark Carter and Sarita Raengpradub)

- 9:30 am The Ins and Outs of Selected Commercially Available DNA-Based Detection Assays (Martin Wiedmann)
- 10:00 am Coffee Break and Vendor Exhibits
- 10:30 am Applied Biosystems Molecular Detection Assays (Veronica Mankinen)
- 10:50 am BioRad Molecular Detection Assays (Wendy Lauer)
- 11:10 am DuPont Qualicon Molecular Detection Assays (Casey Simmons)
- 11:30 am Idaho Technology Molecular Detection Assays (Haleigh Millward)
- 12:00 pm Working Lunch/Question and Answer Session with Company Representatives and Workshop Instructors on Selection of the Molecular Detection Assay that Fits Your Needs
- 1:30 pm Case Studies on Interpretation of Results from Nucleic Acid Based Detection Methods (Including Questions such as "What Does a Positive PCR Assay Mean?" and "How to Deal with a PCR Positive Culture Negative Result?") / Break-out into Groups and Troubleshoot
- 2:30 pm Considerations for Application of Molecular Detection Methods (Integration of Molecular and Cultural Methods, PCR Analysis on Enrichments, PCR on IMS beads, Quality Control)
- 3:30 pm Round Table Discussion and Wrap-up Question and Answer Session
- 4:30 pm Mixer with Happy Hour and Vendor Exhibits (Grey Rock Room, Lory Student Center)
- 5:30 pm Dinner on Your Own

Wednesday, June 25 (Hands-on Workshop Day 1; Room A201 Microbiology Building):

8:00 am	Introduction to DNA Sequence Databases, Uploading/Downloading Sequence Data, Alignment Programs (Kendra Nightingale)
8:30 am	Design Custom PCR Assay for Target Organism of Interest (e.g., <i>Salmonella</i> , <i>E. coli</i> O157:H7, <i>L. monocytogenes</i> , <i>Listeria</i> spp. <i>Pseudomonas fluorescens</i> , <i>Paenibacillus</i> spp., <i>Alicyclobacillus</i>) and Order Primers.
10:30 am	Prepare Conventional Lysates for PCR Amplification of <i>sigB</i> for <i>Listeria</i> isolates and Lysates for Bax® <i>L. monocytogenes</i> SYBR Green Detection PCR.
12:30 pm	Lunch on your own
1:30 pm	Set-up <i>sigB</i> PCR Reactions and Begin Thermal Cycling
3:00 pm	PCR Controls, Internal Positive Controls, Live Positive Controls, etc.
4:00 pm	Design Multiplex PCR
5:30 pm	Dinner on your own

Thursday, June 26 (Hands-on Workshop Day 2, Room A201 Microbiology Building):

8:00 am	Run Gel of <i>sigB</i> PCR Products; Set-up Bax® <i>L. monocytogenes</i> SYBR Green Detection PCR; Purify <i>sigB</i> PCR Products, Quantify DNA, and Submit for DNA Sequencing
11:00 am	Set-up Custom PCR Reactions and Begin Thermal Cycling
12:00 pm	Lunch on Your Own
1:00 pm	Run Gel from Custom PCR

2:00 pm	Lecture and Discussion “DNA Sequencing” (Kendra Nightingale)
3:00 pm	Troubleshooting Custom PCR Results
4:00 pm	Optimization of Custom PCR or Purification of Custom PCR Products and Send for Sequencing (Optional)
6:00 pm	Workshop Closing Dinner at The Moothouse (2626 College at Drake); Mixer from 6:00 pm to 6:30 pm Followed by Dinner at 6:30 pm

Friday, June 27 (Hands-on Workshop Day 3, Room A201 Microbiology Building):

8:00 am	Taqman PCR to Detect <i>E. coli</i> O157:H7 (ABI, Master Mix Kit); Run Gels from Optimization of Custom PCR.
10:00 am	16S-Based Detection Strategies (Kendra Nightingale and Martin Wiedmann)
11:00 am	Lecture and Discussion “mRNA Detection” and hands-on activity to design TaqMan primers and probes (Sarita Raengradub)
12:00 pm	Lunch on Your Own
1:00 pm	Assemble and Proofread Sequence Data and perform BLAST Searches
3:00 pm	Optional Wrap-up Discussion Session and Individual Discussion with Instructors
5:00 pm	Informal Happy Hour, Location TBA