



Listed below are the Top-Five Fellowship Projects in each of the designated program areas.

BIOINFORMATICS

1	Using next-generation genome sequencing and bioinformatics analysis to identify and track monkeypox (Mpox) and rabies viruses.
2	Analysis of wastewater sequencing data for detection of SARS-CoV-2 and public health threats.
3	Establish bioinformatics pipelines for surveillance and drug resistance predication of Mycobacterium tuberculosis (MTB).
4	Enhance detection of high consequence pathogens and novel pathogens that cause viral hemorrhagic fever (VHF)-like symptoms.
5	Incorporating public health data standards into messages.

Program Contact: [Christin Hanigan](#)

BIOSECURITY AND BIOSAFETY (BIORISK)

1	Assessment and implementation of Biorisk Management Program in accordance with ISO 35001
2	Laboratory safety policy and risk assessment procedure updates
3	Develop and update biosecurity protocols
4	Evaluate decontamination methods of laboratory equipment
5	Review biosafety outreach program with external partners including clinical and non-traditional laboratories

Program Contacts: [Michael Marsico](#), [Chris Mangal](#), [Tyler Wolford](#), [Stormy Chester](#)

ENVIRONMENTAL HEALTH

1	Overdose polysubstance method development for human exposures and environmental investigations
2	Novel prenatal screening program targeting exposure, disparities, and environmental justice
3	Radiochemical separations development for the isolation of isotopes from unique matrices
4	Wastewater surveillance of SARS-CoV-2 and other emerging pathogens
5	Targeted and non-targeted analytical approach to identify exposures to environmental contaminants

Program Contacts: [Erin Moran](#), [Julianne Nassif](#), [Sarah Wright](#), [Jennifer Liebreich](#), [Royce Riessen](#)

FOOD SAFETY

1	Evaluation and validation of quantitative PCR for Listeria monocytogenes in foods
2	Optimization of targeted DNA next-generation sequencing
3	Validation of laboratory test methods for emergency outbreak response
4	Highly Multiplex Amplicon Sequencing (HMAS) for direct stool foodborne pathogen identification and outbreak investigation trend analysis
5	Mass-spectrometry for chemical food adulterants

Program Contacts: [Rhodel Bradshaw](#), [Kristen Larson](#), [Shari Shea](#)



INFECTIOUS DISEASE

1	Validation of Whole Genome Sequencing (WGS) of Mycobacterium tuberculosis complex (MTBC)
2	Standardization of PCR laboratory device automations (LDAs) on the Panther Fusion with option to validate next-generation sequencing assays
3	Tracking antifungal resistance: laboratory surveillance and building public health capacity
4	Increasing test efficiency through multiplexing of real-time PCR assays
5	LN34 pan-lyssavirus real-time RT-PCR assay

Program Contacts: [Kelly Wroblewski](#), [Nikki Marchan](#)

INFORMATICS

1	Providing support to the ongoing maintenance and development of the laboratory's LIMS
2	Developing laboratory workflow optimization strategies and streamlining processes across laboratory domains
3	Establishing connectivity with data exchange partners
4	Developing and supporting electronic interfaces
5	Incorporating public health data standards into messages

Program Contacts: [Rachel Shepherd](#), [Vanessa Holley](#), [Michelle Meigs](#)

QUALITY MANAGEMENT

1	Conducting a Laboratory Systems Improvement Program (L-SIP) assessment
2	Development of laboratory risk assessment and management
3	The development of training courses for the Quality Management System (QMS)
4	Quality management modernization and training development
5	Team-focused assessment and implementation of a new electronic non-conformance management system

Program Contacts: [Bertina Su](#), [Lorelei Kurimski](#)

NEWBORN SCREENING

1	Validation and implementation of a 2nd tier next-generation sequencing assay for Cystic Fibrosis
2	Development of newborn screening techniques: methods to improve sensitivity and specificity
3	Improving newborn screening quality with business intelligence software
4	Improving biotinidase deficiency screen and preparing for screening for Mucopolysaccharidosis
5	Development and validation of a 2nd-tier LC-MS/MS method for the identification of Homocystinuria

Program Contacts: [Guisou Zarbalian](#), [Courtney Sumbly](#), [Jelilli Ojodu](#)