Michigan Department of Health & Human Services

# Bureau of Laboratories

Professionalism and Integrity

Teamwork

Excellence

Communication

## Annual Report Fiscal Year 2022

**Laboratory Director**

**Dr. Sandip Shah, PhD., HCLD (ABB)**

## MISSION

The Bureau of Laboratories is dedicated to continuing leadership in providing quality laboratory science for healthier people and communities through partnerships, communication, and technical innovation.

## VISION

The Bureau of Laboratories is a stronger, more diverse team within an integrated public health system. We utilize advanced technology and innovative leadership to provide comprehensive public health services in our dynamic global community.

*The Bureau of Laboratories was established under provisions of the revised [Public Health Code – Act 368 of 1978, Part 96 (333.9601).]()*

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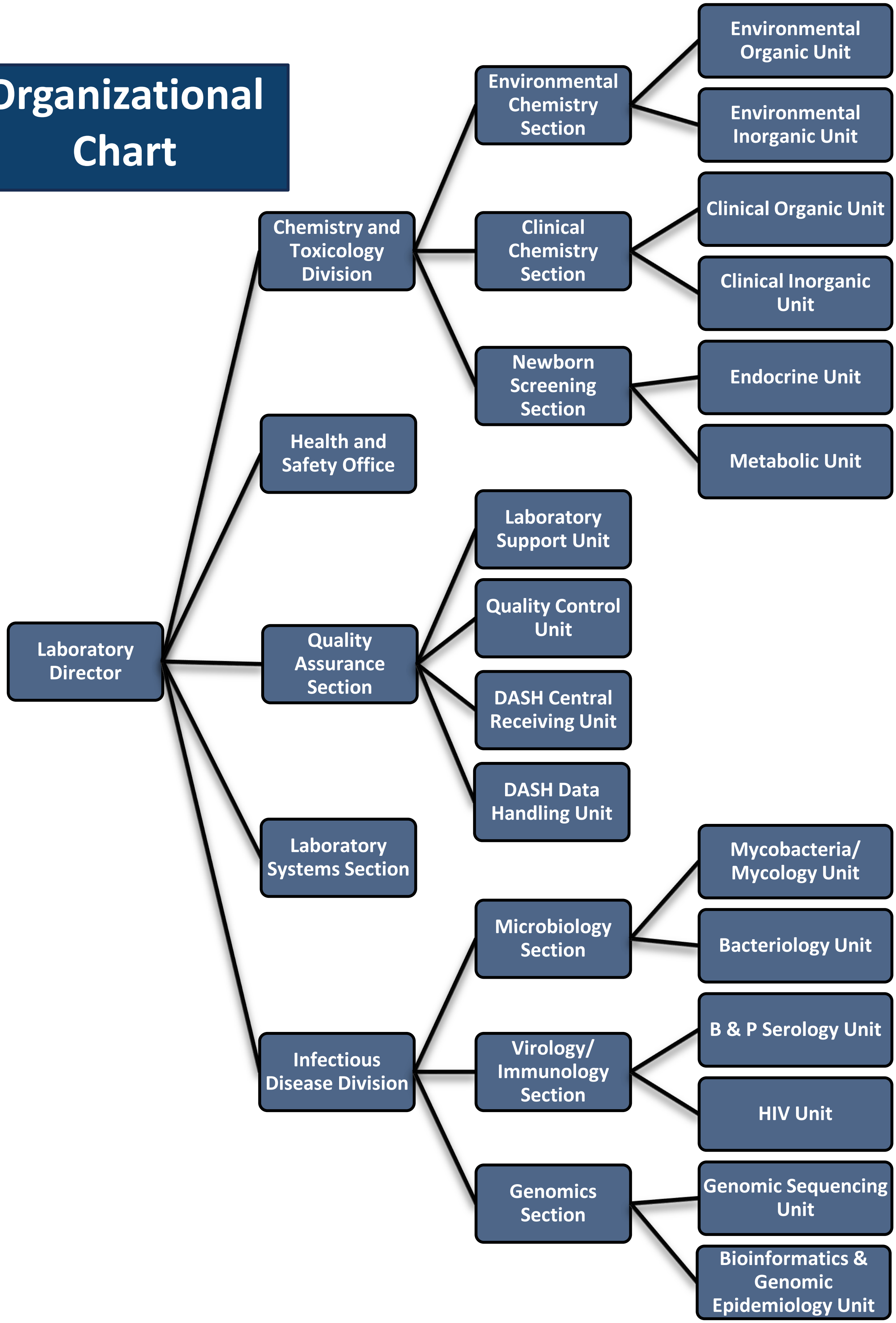
# Organizational Chart



# Key Events

- The Bureau of Laboratories (BOL) increased its workforce by 29 employees in FY 2022.

- In March 2022, Smithsonian Magazine featured former state laboratory bacteriologists Pearl Kendrick and Grace Eldering for their research on and vaccine development for *Bordetella pertussis* (whooping cough): The Unsung Heroes Who Ended a Deadly Plague | Science | Smithsonian Magazine.

- In June 2022, the MDHHS Division of Environmental Health invited BOL employees to tour their new mobile health unit.


- MDHHS Director Elizabeth Hertel visited the BOL in July 2022 (see Featured Articles, p.20) to express gratitude for the hard work during the COVID-19 pandemic.

- The FY 2023 state budget approval includes $250 million for a new Comprehensive State Public Health and Environmental Science Laboratory.

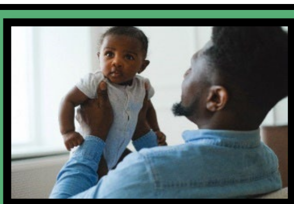
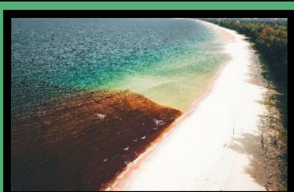
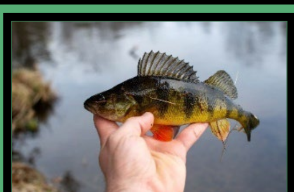
- External accreditation inspections by both the College of American Pathologists (CAP) and the Federal Select Agent program were performed with no major deficiencies.

- The rapid increase in the utilization and generation of genomic data at BOL led to the need for two units within the Genomics Section; the Bioinformatics and Genomic Epidemiology Unit and the Genomic Sequencing Unit.

- Key laboratory testing responses in FY 2022 included:
  - A rise in drug resistant *Candida auris* cases.
  - The Mpox global outbreak.
  - A regional *Escherichia coli* foodborne outbreak.

# Testing by the Numbers

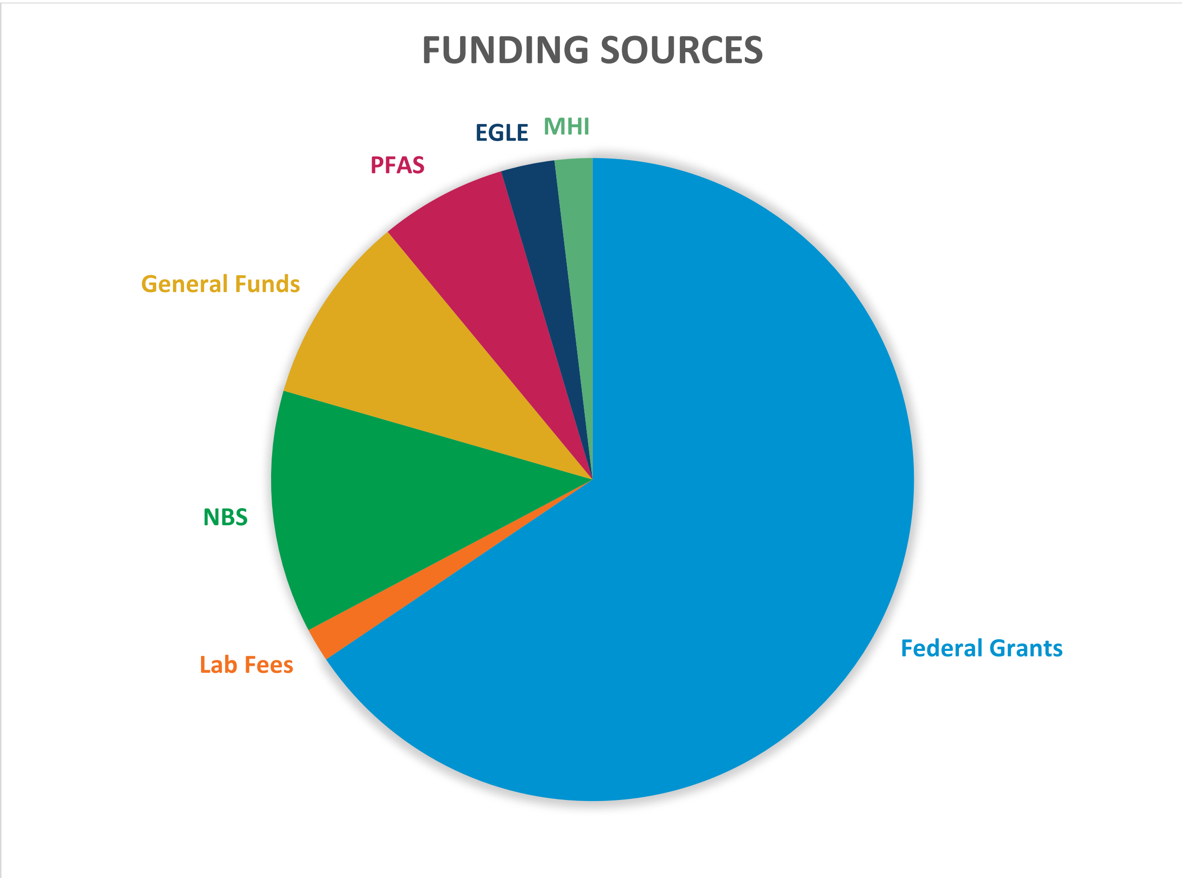
## Total Tests in FY 2022: 6.8 million

| | | |
|---|---|---|
|  | Newborn Screening | **6,306,651** tests for **100,974** newborns |
|  | Infectious Diseases | **302,216** tests from **164,804** specimens |
|  | Blood and Environmental Lead | **16,806** tests for individuals and households |
|  | Harmful Algal Blooms (HAB) | **23,785** tests of drinking and recreational water |
|  | Per- and Polyfluoroalkyl Substances (PFAS) | **103,590** tests from **2,302** samples of water, serum, fish tissue, and passive samplers |
|  | Fish Monitoring Program | **85,504** tests for polychlorinated biphenyls (PCBs) and pesticides and **1,348** tests for heavy metals from **1,809** fish |

# Funding by the Numbers

Federal grants comprise the largest amount of funding for the BOL. BOL federal partners include the United States (U. S.) Centers for Disease Control and Prevention (CDC), U. S. Food and Drug Administration (FDA), U. S. Department of Agriculture (USDA), U. S. Department of Homeland Security (DHS), and U. S. Department of Health and Human Services (HHS).

The remaining funding derives from BOL newborn screening (NBS) and lead testing laboratory fees, State of Michigan general funds, State of Michigan PFAS response funding, Michigan Department of Environment, Great Lakes, and Energy (EGLE), and the Michigan Health Initiative (MHI).



# Chemistry and Toxicology Division

## Analytical Chemistry and Newborn Screening Sections

The Chemistry and Toxicology Division is designated as a CDC Laboratory Response Network-Chemical (LRN-C) Level 1 laboratory that tests clinical samples in the event of a regional chemical exposure. The Analytical Chemistry (AC) Section of this division provides expertise in testing clinical specimens for human exposures and environmental samples for contamination of chemical agents, metals, and toxins. The Newborn Screening (NBS) Section performs tests for 57 congenital and metabolic disorders such as cystic fibrosis and sickle cell anemia for every infant born in Michigan. This laboratory testing program is part of a comprehensive state program for newborns including referral to specialty clinics and follow-up care to prevent and treat serious health problems.

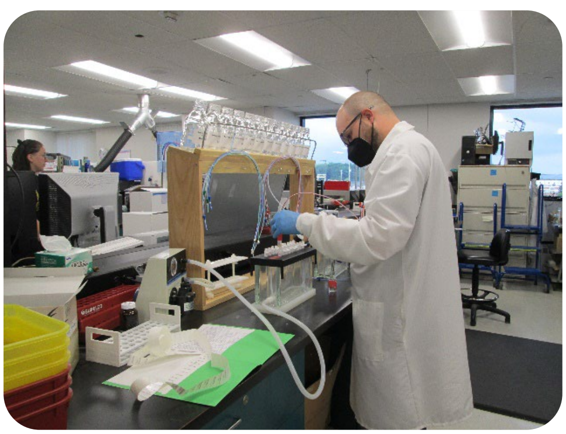
### Highlights from FY 2022 include:

- Analyzing 180 Food Emergency Response Network (FERN) surveillance samples for a panel of metals and organic compounds.
- Performing 1,206 tests for the Dimension Biomarker panel, 26 tests for creatinine serum, 13 tests for creatinine urine, and 24 tests for hemoglobin A1C as part of the organic biomonitoring testing.
- Performing 126 tests on 18 specimens for arsenic speciation as part of the trace metals biomonitoring testing.
- Participating in CDC Public Health Emergency Preparedness (PHEP) Surges and Exercises:
    - Exercise of 10 specimens for abrine and ricinine in November 2021.
    - Tabletop materials inventory exercise for blood metals.
    - Surge exercise of 100 specimens for organophosphate nerve agents (OPNAs) in May 2022.
    - Exercise of 10 specimens for cyanide in September 2022.
- The AC Section is expanding testing capabilities and creating a drinking water metals testing unit in support of surveillance testing throughout the state. Three scientists were hired to implement the water testing.
- Hiring a clinical organic response (COR) technician and will hire two more to fill vacancies.
- The AC Section is investigating the development of a PFAS biosolids method on liquid chromatography - tandem mass spectrometry (LC-MSMS) with a 45-analyte panel.
- The NBS Section acquired new QSight 225 MSMS instrumentation to be used in screening for X-linked adrenoleukodystrophy (X-ALD).
- NBS awarded a two-year grant with the Cystic Fibrosis (CF) Foundation to develop a next-generation sequencing (NGS) screening method for CF NBS.

- NBS Section Manager, Shawn Moloney, was hired after the retirement of previous manager, Mary Seeterlin.
- Shawn Moloney was appointed to the Association of Public Health Laboratories (APHL) Quality Assurance/Quality Control Subcommittee.

## Test Validations and Verifications

- Developing tissue beef liver method for the analysis of PFAS compounds on a newer technology, LC-MSMS, and expanded the analyte panel to 45 analytes.
- Developed a dried blood spot method for the analysis of PFAS compounds on an LC-MSMS with an analyte panel to 45 analytes.
- Validated new method: Mass Spectrometry for the Detection of Lysosomal Storage Disorders (LSDs): Pompe and Mucopolysaccharidosis Type 1 (MPS I).
- Validated method and began screening for Guanidinoacetate methyltransferase (GAMT) deficiency.
- Developing method for Persistent Organic Pollutants (POPs) in serum.
- Developing method for FreeT4, Free T3 and other thyroid hormones in serum.



# Infectious Disease Division

## Microbiology, Virology, and Genomics Sections

The Infectious Disease Division is designated as a CDC Laboratory Response Network Biological (LRN-B) Advanced Tier laboratory that tests biological samples for the CDC, the Federal Select Agent program, and the Food Emergency Response Network (FERN). It also provides quality reference and specialized testing services for rapid and effective detection and surveillance of emerging and existing communicable diseases. The Microbiology Section performs testing for a variety of threats such as foodborne illness, sexually transmitted infections (STI), fungal disease, as well as respiratory diseases like tuberculosis (TB) and pertussis. The Virology Section handles viral public health threats such as SARS CoV-19, Jamestown Canyon virus, rabies, and Eastern Equine Encephalitis (EEE) virus. The Genomics Section assists epidemiologic efforts to trace and monitor emerging infectious diseases and their variants via genetic sequencing and data analytics.

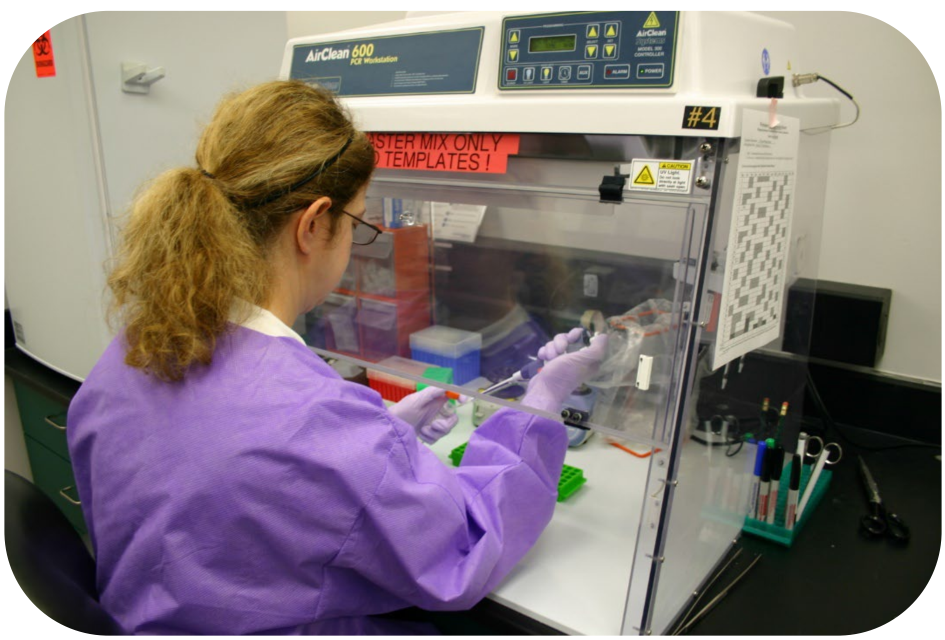
### Highlights from FY 2022 include:

- Two units were generated within the Genomics Section: Bioinformatics and Genomic Epidemiology Unit and Genomic Sequencing Unit. This was in response to the rapid increase in the utilization and generation of genomic data at BOL.
- Hired new Bioinformatics and Genomic Epidemiology Unit Manager, Dr. Arianna Miles-Jay, and new Genomic Sequencing Unit Manager, Rebecca Kramer.
- The Michigan Sequencing Academic Partnership for Public Health Innovation and Response (MI-SAPPHIRE) academic partnership was launched. The Genomics Section hosted three SAPPHIRE interns onsite, facilitated the training program across all SAPPHIRE sites, and hosted a day of science sharing and education at BOL.
- The Genomics team was awarded the roles of Bioinformatics Regional Resource for the Midwest Region and Domain Leader for the AMD Data Modernization Community of Practice for the CDC's Office of Advanced Molecular Detection.
- The Virology Section saw an increase in testing in response to the national Mpox outbreak. They also had to quickly retrain and reorganize to continue rabies testing along with other routine testing during the busy summer months after the unexpected loss of a colleague (see In Memorium, p. 25).
- The Microbiology Section saw an increase of more than 2,698 tests performed compared to the previous year. They experienced a considerable increase in STI testing, a rise in *Candida auris* cases, enteric bacterial culture, and *E. coli* clinical specimen testing. Notable testing declines were observed for aerobic culture and antimicrobial resistance confirmation testing.
- Mycobacteria/Mycology Unit Manager, Angie Schooley, spoke on a podcast for World TB Day (March 24): Lab Culture Ep. 28: Scientists in Oregon and Michigan Honor World TB Day - APHL Blog

- The Mycobacteria/Mycology Unit assisted hospitals in Michigan as well as the State of Texas with TB testing. They also provided test validation assistance to local partners and the states of Alaska, Virginia, Indiana, Washington, Vermont, and Puerto Rico.
- An additional updated matrix-assisted laser desorption/ionization – time of flight (MALDI-TOF) instrument was purchased to ensure redundancy.

## Test Validations and Verifications

- Cepheid Xpert Xpress SARS-CoV2/FLU/RSV Verification.
- Dimorphic Fungal Identification by MALDI-TOF.
- Verification of new Bruker MALDI-TOF Biotyper Sirius Model.
- *Yersinia pestis* LRN multi-lab validation study for a new PCR and extraction procedure.
- *Clostridium botulinum* MALDI-TOF toxin USDA FERN multi-laboratory validation study.



# Quality Assurance Section

The Quality Assurance (QA) Section supports all laboratory quality system essentials and external proficiency testing with the Laboratory Support (LS) Unit and Quality Control (QC) Unit. The QA Section also includes the Data and Specimen Handling (DASH) Central Receiving Unit, the DASH Data Handling Unit, and Laboratory Warehouse operations. The DASH Central Receiving Unit receives all samples for laboratory testing, resolves specimen errors, and is proficient in Division 6.2 Packing and Shipping. The DASH Data Handling Unit is responsible for specimen requisition entry and data resolutions.

**Highlights from FY 2022 include:**

- In June of 2022, each area of the BOL performing clinical testing had a successful College of American Pathologists Inspection (CAP) resulting in only minor findings.
- In August 2022, Microbiology food testing, Trace Metals, and the Clinical Organic Response Unit had a successful follow-up American Industrial Hygiene Association (AIHA) accreditation audit resulting in no deficiencies.
- Worked alongside DASH Central Receiving and TB Molecular staff to secure a date for the implementation of a bureau-wide inventory manager for laboratory supplies.
- Thirty-four laboratory test validations/verifications/amendments were processed and implemented.
- The DASH Central Receiving Unit accessioned and processed 171,000 specimens, packaged and shipped 424 specimen referrals to external partners, and resolved 3,239 specimen-level errors.
- The Laboratory Warehouse closed out the distribution of HHS Federal Relief supplies, distributing more than 18 million swabs and vials of transport media in a joint effort with the Michigan Bureau of EMS, Trauma, and Preparedness (BETP) in addition to the distribution of the regular supplies for all other testing programs.
- The DASH Data Handling Unit processed 281,500 forms for incoming samples and specimens into the laboratory. This included the data entry of all demographic information on each form into one of two laboratory information management systems (LIMS) used by the laboratory.
- In conjunction with the BOL Accounting Technician, the QC Unit secured funding and have vendors working alongside the Michigan Department of Technology, Management, and Budget (DTMB) to replace the existing BOL reverse osmosis water system, which has been in place since building occupancy (circa 1998).

- The QC Unit coordinated pre- and post-logistics and completed documentation for 32 vendor visits completing the 1,042 annual equipment verifications required by our regulators and accreditations, completed quality control on 871 shipments of commercial and in-house made media, and tracked 772 competencies, 243 total internal and external proficiency test (PT) events, and 119 corrective action reports.
- The LS Unit ran 347 loads of glassware and 67 sterilization runs providing approximately 20,820 pieces of clean glassware to the BOL testing areas.

| **2022 External Proficiency Test Surveys** | | |
|---|---|---|
| PT Provider | PT Surveys Ordered | Total Number of PT Events |
| AIHA | 1 | 4 |
| API | 4 | 12 |
| CAP | 37 | 95 |
| CTQ | 1 | 3 |
| LGC | 3 | 5 |
| LRN-B | 1 | 2 |
| LRN-C | 12 | 39 |
| NSQAP | 9 | 25 |
| WSLH | 12 | 25 |

AIHA = American Industrial and Hygiene Association

API = American Proficiency Institute

CAP = College of American Pathologists

CTQ = Centre de Toxicologie du Québec

LGC = Laboratory of the Government Chemist

LRN-B = Laboratory Response Network for Biological Threats

LRN-C = Laboratory Response Network for Chemical Threats

NSQAP = Newborn Screening Quality Assurance Program

WSLH = Wisconsin State Laboratory of Hygiene

# Health and Safety Office

The Bureau of Laboratories is actively committed to preserving the health and safety of its laboratory staff and protecting the community and the environment. The Health and Safety Office provides several required annual employee training programs and tracks incidents to improve safety and mitigate future incidents. Below are the 2022 safety activities and statistics:

### Laboratory Safety Actions

- Fifteen accident/injury/incidents reported.
- Two biological exposure incidents.
- One chemical splash.
- Five safety committee meetings.
- Eight tenants committee meetings.
- Onsite influenza immunization, rabies titer draws, and TB skin test clinic.

### Safety Training

- One hundred forty laboratory staff received annual refresher training for bloodborne pathogens and chemical safety.
- Twenty-nine new laboratory employees were trained.
- Eight employees received formaldehyde monitoring training.
- Forty-four employees were trained in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED) operation, and first aid.
- Nine laboratory employees were trained in hazardous chemical waste transportation and storage.
- Four employees completed the Hazardous Waste Operations and Emergency Response (HAZWOPER) eight-hour refresher training.
- Forty-one select agent program employees were trained in agent biosafety, biosecurity, incident response, and insider threat awareness.
- Respiratory training and fit testing were provided for all staff who wear respirators. Forty-nine employees were fit tested for N95 respirators, and twenty-five staff were trained to use controlled air-purifying respirators (CAPR).
- NARCAN/Naloxone training was provided by Ingham County Health Department in July 2022, and BOL now stocks NARCAN.

## Laboratory Building Upgrades

- Four walk-in cold rooms were replaced.
- Laboratory ventilation controls are in the process of being updated.
- The laboratory expansion project construction began with completion projected in early 2023.

# Laboratory Systems Section

The Laboratory Systems Section (LSS) administers two laboratory information management systems (LIMS) ensuring real-time reporting of laboratory results to hospital laboratories, veterinary clinics, physician offices, clinical laboratories, environmental agencies, as well as local, state, and federal health officials to track outbreaks and prevent illness, disease, and deaths. LSS outreach staff provides training in package and shipping for biological and chemical threat agents and laboratory biosafety, represents the BOL in public health emergency preparedness activities, and manages a laboratory science education program for K-12 students.

**Highlights from FY 2022 include:**

- Biosafety Officer and State Training Coordinator, Carrie Anglewicz, received the Association of Public Health Laboratories (APHL) 2022 Leadership in Biosafety and Biosecurity Award.
- The State of Michigan instituted a new website management system, and a great amount of work went on behind the scenes to migrate BOL website content from the old management system to the new.
- Seven new tests were created in STARLIMS, along with 113 Request for Changes (RFCs) with less than a two-day turn-around time. This was done while configuring a new LIMS, training two new LIMS administrators, and managing several other IT-related projects such as CC360 data sharing, electronic test orders and results (ETOR) web enhancements, and automatic reflexing for bacterial whole genome sequencing (WGS) testing.
- To remedy a 'too many connections' issue with the Newborn Screening computer that handles the transfer of NBS instrument data across the lab firewall, a Network Attached Storage (NAS) solution was implemented. This issue needed to be solved before adding new production instruments and allows for a more seamless transfer of instrument data without the worry of how many instruments are connected.
- Outreach staff organized nine laboratory facility tours.
- The Biosafety Officer performed six internal and five external biosafety trainings.
- The Bioterrorism (BT) Training Coordinator started offering a "Recognize, Rule out, Refer" lecture. The training teaches Sentinel Laboratories to identify possible biothreat agents. The class was delivered in-person to four different sites and 42 laboratorians attended.
- A total of 330 persons attended packing and shipping training classes designed to instruct partners on how to submit possible biothreat agents to BOL. A return to in-person classes allowed for 18 classes to be held at multiple locations throughout the state. An online on-demand class is also available.

- The Chemical Threat (CT) Training Coordinator provided two trainings with 32 participants and successfully completed and passed the annual CDC Specimen Packaging and Shipping Exercise (SPASE).
- A new Explore Lab Science (ELS) K-12 Outreach Coordinator, Heather Seymour, was hired after Sandy Lenneman retired.
- The ELS Coordinator attended a laboratory science teaching workshop through Michigan State University's Biomedical Laboratory Diagnostics program.
- Throughout the year, 11 college interns assisted with the ELS program.
- Ten ELS events were attended and reached around 1,600 students across Michigan.
- Thirty-three science activity packets were distributed to BOL employees to share with their children for MDHHS Kids Day.

# Publications and Presentations

**Publications:**

Hartog, N., Hershfield, M., Michniacki, T., **Moloney, S.**, Holsworth, A., Hurden, I., Fredrickson, M., Kleyn, M., Walkovich, K., Secord, E. (2022). Newborn tandem mass spectroscopy screening for adenosine deaminase deficiency, *Annals of Allergy, Asthma & Immunology*, ISSN 1081-1206. https://doi.org/10.1016/j.anai.2022.07.016

**Presentations:**

APHL National NBS Symposium

- Shawn Moloney presented “Ten Years of Sending Second Tier Testing for Propionic Acidemia, Methylmalonic Acidemia, and Cobalamin Disorders and the Lessons Learned.”
- Mary Seeterlin presented “An Algorithm for Outlier Detection Based Upon the Correlation Between Gestational Age and Birth Weight.”
- Isabel Hurden, Shawn Moloney, Mary Seeterlin, and Mary Kleyn presented “Data-driven Approach to Revising Screening Cutoffs for Congenital Adrenal Hyperplasia.”

12th National Conference on Laboratory Aspects of Tuberculosis

- Kim McCullor was a panelist for a talk on next-generation sequencing test validation.
- Angie Schooley presented a poster on TB testing workflows.
- Jolene Vanneste presented a poster on TB targeted sequencing test validation.

APHL National Annual Meeting

- Angie Schooley presented a talk on MALDI-TOF testing.
- Mary Bonifas presented a talk highlighting the “APHL Guide for CLIA Internal Audits Related to High Complexity Testing.”
- Heather Blankenship presented on surveillance genomics quality and validations.
- Heather Blankenship and Arianna Miles-Jay participated on a panel on the use of genomic epidemiology in public health.

APHL MALDI-TOF For GC Identification Webinar

- Kim McCullor presented.

Michigan Newborn Screening Program Hospital and Midwife Educational Seminar

- Shawn Moloney and Angela Aldrich presented “Avoiding Unsatisfactory Specimens.”

World TB Day Conference

- Angie Schooley and Rebecca Kramer presented talks.

South Central Association of Clinical Microbiologists (SCACM) Fall Meeting

- Kim McCullor presented "A Candid Conversation about *Candida*: What Your Laboratory Can Do to Help Stop the Spread of *C. auris*."
- Several BOL employees assisted with administrative duties.

Michigan Environmental Health Association Annual Meeting

- Heather Blankenship and Arianna Miles-Jay presented "An Introduction to Public Health Genomics" seminar.

Council of State and Territorial Epidemiologists (CSTE)

- Heather Blankenship and Arianna Miles-Jay taught an advanced molecular workshop on pathogen genomics at the CSTE annual meeting.
- Arianna Miles-Jay presented "An Introduction to Public Health Genomics" webinar.

Additional educational opportunities offered to partners by BOL

- Kim McCullor presented "Lab 101" at Washtenaw County Health Department.
- Jolene Vanneste and Beth Holben presented "Lab 101" at District Health Department #10.
- Heather Blankenship and Arianna Miles-Jay guest lectured for an "Introduction to Molecular Epidemiology" course at the University of Michigan School of Public Health.

# Featured Articles

## Director Hertel thanks state lab workers for their tireless work during COVID-19 pandemic

MDHHS HOPE Weekly, August 1, 2022

Director Elizabeth Hertel visited the Bureau of Laboratories in north Lansing Thursday to give staff members there a big “thank you” for their outstanding work during the COVID-19 pandemic response.

Elizabeth praised the bureau for operating one of the top public health laboratories in the country, noting it was the top one nationally for COVID genome sequencing volume and helped nearly a dozen other states start performing sequencing.

Since the start of COVID-19, the state laboratory and the regional labs it directs and supports have reported out more than 209,000 test results. The state lab also has helped many labs statewide begin accurate and reliable COVID-19 testing and supported them in other ways.

Elizabeth also touched on the bureau's other important work, including newborn screenings and testing for orthopoxvirus to identify monkeypox. She said she is optimistic about the newly approved FY23 budget, which includes $250 million in State Fiscal Recovery funds for a new state public health and environmental science laboratory.

“It is important to me that you know what a difference you make in people’s lives, and how much I appreciate all of you and what you contribute each and every day,” Elizabeth said to employees. “You are the foundation of so much of what we do as a department. We couldn’t do this work or make this type of impact without you.”

Elizabeth is shown with bureau employees in the top photo. Ben Hutton of the microbiology lab is shown in the lower photo.

## A New Tool to Identify Household Sources of Lead Exposure

BOL Lab Link, Summer 2022
Volume 29, Number 3

Lead is a non-essential constituent of the body and is present because of its existence in our environment due to its use in manufacturing of ammunition, metal alloys, and batteries. Exposure to lead can have serious health effects for both children and adults. Children under the age of six, pregnant women, or a developing fetus can experience particularly dangerous health effects from lead exposure.

The Analytical Chemistry section at the Bureau of Laboratories (BOL) recently validated a new methodology to assist in identifying household sources of lead exposure in children. The methodology examines lead isotopic ratios on clinical specimens and environmental samples to differentiate sources of environmental lead. This is carried out by associating the isotope ratio present in the child's blood with that of environmental sources. This methodology makes it possible to further investigate sources of lead poisoning and lend a degree of confidence towards the source responsible for the poisoning when there may be multiple sources present.

When a child has been identified as having an elevated blood lead level, the goals are to identify the source of lead and stop the lead exposure. A vast majority of the time this is accomplished through the analysis of lead in blood specimens and environmental samples, e.g., settled dust, soil, spices, teas, and supplements. At times, lead is still present in the child's environment even after mitigation techniques have been employed.

Lead isotope ratio analysis can supplement lead hazard evaluations in identifying sources of lead exposure in children when the current mitigation techniques have been exhausted. The Trace Metals Unit is excited this tool identifies household sources of lead, and we have the ability to assist Michigan citizens with prevention of lead exposure.

MDHHS PRESS RELEASE: Sept. 19, 2022
Lynn Sutfin, MDHHS
Erin Coller, ACD

# MDHHS adds Guanidinoacetate Methyltransferase Deficiency to newborn screening panel

LANSING, Mich. – September is Newborn Screening Awareness Month, and starting this month Michigan babies with guanidinoacetate methyltransferase (GAMT) deficiency will now be diagnosed early thanks to the addition of a new screening to the state's newborn screening panel. GAMT is an inherited disorder that primarily affects the brain and muscles.

Newborn screening is a public health program required by Michigan law to identify babies with rare but serious disorders, like GAMT deficiency. All babies need to be screened in order to find the small number who look healthy but have a rare medical condition. Michigan's newborn screening system provides testing and follow-up for more than 50 conditions. Michigan is the third state in the United States to screen for GAMT deficiency.

"By being one of the first states to implement GAMT deficiency screening, Michigan continues to display its dedication to providing newborns the opportunity to achieve the best possible health outcomes," said Dr. Natasha Bagdasarian, MDHHS chief medical executive.

GAMT deficiency is an inherited condition that affects the body's ability to produce creatine. Without an adequate supply of creatine, the body is unable to use and store energy properly. This can cause developmental delay, speech problems, seizures and behavior issues such as autism and hyperactivity. Lack of early treatment can lead to lifelong cognitive impairments which can be severe. Starting the dietary and medical treatment early in life before symptoms arise is most effective.

Heidi Wallis, executive director of the Association for Creatine Deficiencies (ACD), personally knows the importance of early diagnosis and treatment. ACD is committed to providing patient, family and public education to advocate for early intervention through newborn screening, and to promote and fund medical research for treatments and cures for Cerebral Creatine Deficiency Syndromes.

"I have two children with GAMT, and the difference a diagnosis at birth makes is nothing short of life-changing," Wallis said. "My daughter, who was diagnosed at 5-years-old, has recurrent seizures that cause her to sustain serious injuries. She is intellectually disabled and will need constant care the rest of her life. My son, diagnosed and treated at birth, is a neurotypical 10-year-old and will no doubt become an independent and contributing member of society."

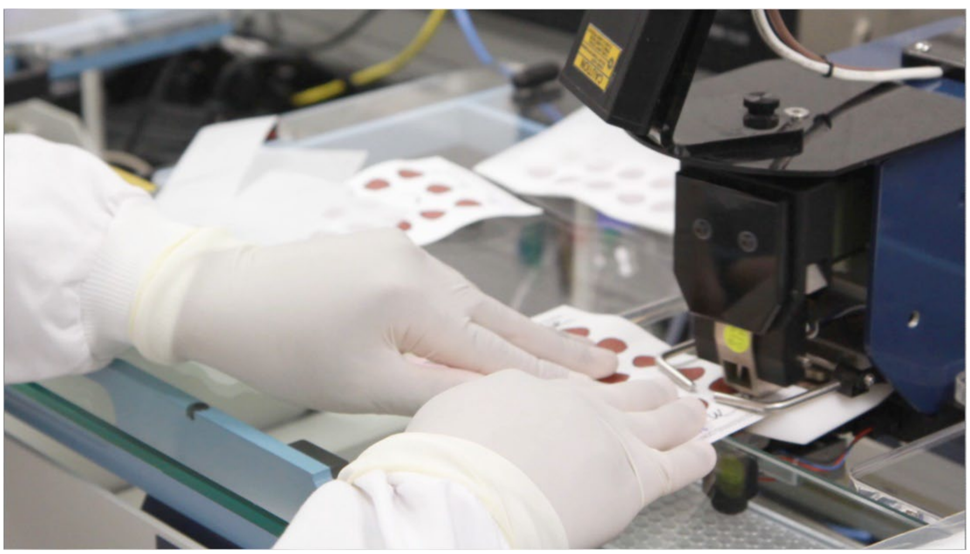
In May, ACD announced that after six years of advocacy efforts, the United States Advisory Committee on Heritable Disorders in Newborns and Children voted unanimously to advise the

Secretary of Health and Human Services Xavier Becerra to add GAMT to the Recommended Uniform Screening Panel (RUSP). The RUSP provides state newborn screening programs with a carefully curated list of disorders that meet the committee's criteria for inclusion. GAMT is expected to be added to the RUSP upon HHS Secretary Becerra's approval in November.

"We are grateful for Michigan's addition of GAMT deficiency to their state newborn screening panel, and the momentum this will bring towards universal screening for GAMT," said Wallis.

To learn more about GAMT deficiency, visit babysfirsttest.org and creatineinfo.org.

To learn more about newborn screening in Michigan, contact the MDHHS Newborn Screening Program at 866-673-9939, via email at newbornscreening@michigan.gov or visit Michigan.gov/newbornscreening.



# In Memoriam

Derek William Freridge, 47, of Haslett, MI, died on Sunday May 22, 2022 along with his 14 year old son Rabon Wiley Freridge in an automobile accident. Derek worked as a Microbiologist at the State of Michigan Department of Health, where he was a specialist in diagnosing Rabies, Covid, and Ebola. Derek was a loving father and husband, brother and son, a friend to many and a defender of justice. He was a lover of turtles and morels, beer and pupusas, camping and festivities, and gatherings of friends and family. He was an outdoor enthusiast who was on the Board of Directors for Circle Pines Outdoor Center. He was a Founder and President of S.W.E.F. the Salvadoran Women's Education Foundation, which provides scholarships for El Salvadoran girls to attend high school which is not free in El Salvador.

Excerpt from obituary, PALMER BUSH & JENSEN FAMILY FUNERAL HOMES HOLT DELHI CHAPEL

# Contact Us

## Michigan Department of Health and Human Services

## BUREAU OF LABORATORIES

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