



Fall 2017

# Beyond the SCPE

A publication of the Missouri State Public Health Laboratory



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## The MSPHL Support System

By: Bill Whitmar, Laboratory Director

If you really think about it, we work in a truly great place and have a truly great job. I know that's pretty easy for me to say given my place here, but the reasoning behind the statement is as follows: **our mission is truly important** to a great many people; we are provided the material for our jobs; we work in a fabulous and safe facility; we have created a structure that ensures accurate, precise and repeatable test results; we have a wonderful and reliable support system; and finally, **we value each other** regardless of position.



Bill Whitmar, MSPHL Laboratory Director

It's that last bit that I wish to address specifically. There are roughly 94 staff in this laboratory at any point in time. Those people represent literally hundreds and hundreds of tasks or jobs that must be performed each day to perform the mission of this facility. For this to occur, **each and every one of us must do our part, help others, and otherwise be a part of the team that is the laboratory.** Imagine, if you will, the amount of coordination among the different floors of the building, the units within the building, those individual laboratories,

and the people in those labs and offices. A thousand or more packages, specimens and mail are received and routed throughout daily. Specimen requests are flowing up and down within the building. Laboratory consumables and other orders are generated, approved and sent. Innumerable test results are printed, folded and mailed. All of this happens without a hitch and before you know it, the next day arrives and the process is repeated. How does

**"In my eyes, we are not only all equal, but we are equally important"**

this happen? It happens due to a group of indispensable individuals who are a part of an equally indispensable and high-functioning team.

This laboratory, and laboratories across the world, has perfected this symphony due to three factors:

- 1. Modern and safe facilities:** staff can operate with few constraints due to modern design, spacious work environment and inherent safety features of the building and PPE
- 2. Equipment for the task at hand:** in general, laboratories, including the



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MSPHL possess equipment to complete the jobs what we are tasked to do which is to provide for the public's health

### 3. A dedicated, engaged and competent workforce: that is you.

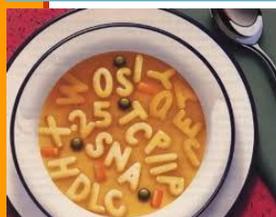
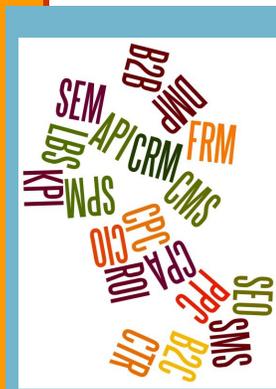
The workforce that is the MSPHL is our greatest resource. Regardless of who **you** are and what **you** do to contribute to the mission, **you** are important to that mission to the same degree as anyone else. Without any single person, or single job class of staff in this building, the work in the laboratory in its totality will not be complete. Each and every one of you brings a suite of strengths to this operation. Do not ever feel as though you are any less important than another person here. In my eyes, **we are not only all equal, but we are equally important.**

In fact think more broadly of your job and the interactions that you have each day. Do you work with just other laboratorians? Or do you do reach out more beyond the confines of the laboratory? I would hazard to guess the latter for almost all of you. Whether you make or take telephone calls from our customers, receive requests, greet guests or the public that bring in samples, give presentations or courses to the public or public health professionals, speak to vendors, or any of a plethora of other scenarios each of you have acted within what is called the public health laboratory SYSTEM. That is a system of interacting partners from around the state, region, nation or globe that seeks as its goal to promote, protect and partner for health by delivering quality public health laboratory services. Make no mistake...each and every one of you here and in public health, environmental health or clinical laboratories around the world are an integral part of that system.

Bill

## Acronyms

AFB – Acid Fast Bacillus	MOLRN – Missouri Laboratory Response Network
APHL – Association of Public Health Laboratories	MSDS – Material Safety Data Sheets
CDC – Center for Disease Control and Prevention	MSPHL – Missouri State Public Health Laboratory
CF – Cystic Fibrosis	NBS – Newborn Screening
CSF – Cerebral Spinal Fluid	P-card – Purchasing Card
CLIA – Clinical Laboratory Improvement Amendments	PART – Post Analytical Reporting Team
COOP – Continuity of Operations Program	PCR – Polymerase Chain Reaction
DCPH – Division of Community and Public Health	PHEP – Public Health Emergency Preparedness
DHSS – Department of Health and Senior Services	PPE – Personal Protection Equipment
DNR – Department of Natural Resources	QI – Quality Improvement
DPS – Department of Public Safety	rRT-PCR – Real-time, Reverse Transcription Poly-
DRL – Division of Regulation and Licensure	merase Chain Reaction
EB – Environmental Bacteriology Unit	SARS – Severe Acute Respiratory Syndrome
EiMF – Excellence in Missouri Foundation	SCID – Severe Combined Immunodeficiency
ELC – Epidemiology and Laboratory Capacity grant	SDS – Safety Data Sheet
EMAC – Emergency Management Assistance Compact	S.C.O.P.E. – Systematically Collaborating for Overall
EOM – Emergency Operations Manual	Performance Excellence
FBI – Federal Bureau of Investigation	SPHL – State Public Health Laboratory
FDA – Food and Drug Administration	TB – Tuberculosis
ITSD – Information Technology Services Division	TRF – Time Resolved Fluorescence
LIS – Laboratory Information System	USDA – United States Department of Agriculture
LPES – Laboratory Preparedness, Education and Safety	USPS – United States Postal Service
LRN – Laboratory Response Network	WHO – World Health Organization
LSD – Lysosome Storage Disorder	WMD – Weapon of Mass Destruction
MGIT – Mycobacteria Growth Indicator Tube	



## MSPHL Conducts Third Customer Survey

By: Laura Naught, CLIA Director

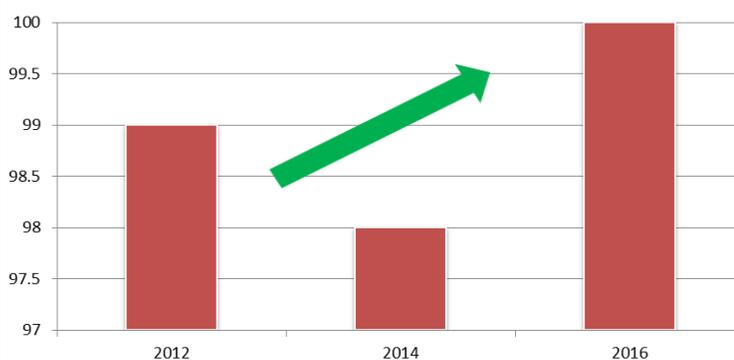
In order to improve customer service the Missouri State Public Health Laboratory (MSPHL) repeated its Customer Satisfaction Survey that was first conducted in 2012. This survey was conducted during the month of December 2016. Because it was difficult to determine how best to reach our customers to gain participation, a survey was developed and placed on the Laboratory's website. For this survey customers were only notified of the survey through electronic means such as email, fax, a website link and the Friday Facts. The MSPHL is happy to report that the Laboratory received 131 responses. That is slightly less than the previous two surveys which had 142 respondents each. This survey was set to require all questions to be answered, with the exception of the courier services questions, therefore 'n' will not be noted in the graphs unless it is less than the 131 respondents.

A majority of the customer survey responses came from Local Public Health Agencies. However, we also had hospitals, health care providers, DHSS program staff, other state agencies and a private citizen return our survey this year. This helped give the MSPHL a comprehensive look at its services. This survey covered several topics such as communication, ease of ordering test kits and result reports. Satisfaction for the overall services provided at the MSPHL was 100%. That is a 2% increase from the 2014 survey.

From the survey it appears that MSPHL customers want an alternative to receiving result reports by mail. This has been a recurring theme since this survey began in 2012. The MSPHL has implemented or is currently working on several projects to improve the accessibility of result reports that will be faster than traditional mail. The MSPHL currently has two web portals that house newborn screening results and environmental bacteriology and chemistry result reports. It is anticipated that by early 2018 all laboratory results will be accessible through a web portal which will decrease our turnaround time of sending results to virtually zero.

The MSPHL would like to thank everyone who took our survey. The MSPHL values your opinion and has learned a great deal about laboratory services from your responses. As the MSPHL improves, additional surveys to measure laboratory performance may be necessary. The Laboratory appreciates your participation in advance. If you ever have a question or concern please feel free to contact the laboratory directly through email [LabWebI@health.mo.gov](mailto:LabWebI@health.mo.gov) or call 573-751-3334 and we will be happy to help in any way we can.

**Overall MSPHL Satisfaction of Services  
At least Slightly Satisfied**  
3 Survey Trend



*The MSPHL achieved a 100% satisfaction rate for overall services in 2016. Laboratory staff celebrated with ice cream and cupcakes while the survey results were revealed earlier this year.*

# 2016 MSPHL Annual Team Meeting

In December the MSPHL gathered for their Annual Team Meeting. This years' theme was Star Wars and topics that were covered included quality improvement updates, a fiscal report, HIPAA and ethics training, COOP reminders and exciting things coming in 2017. There was also a recognition of Years of Service for Laboratory Employees. MSPHL staff also participated in some Star Wars themed intro movie clips that were shown during the meeting as well.



Years of Service for 2016	
<b>35 Years</b> Jessica Connell	<b>10 Years</b> Roy Tu'ua Jessica Meller
<b>25 Years</b> David Byrd	<b>5 Years</b> Keith Bock
<b>15 Years</b> Melissa Brown Randy Schillers Phil Schott	



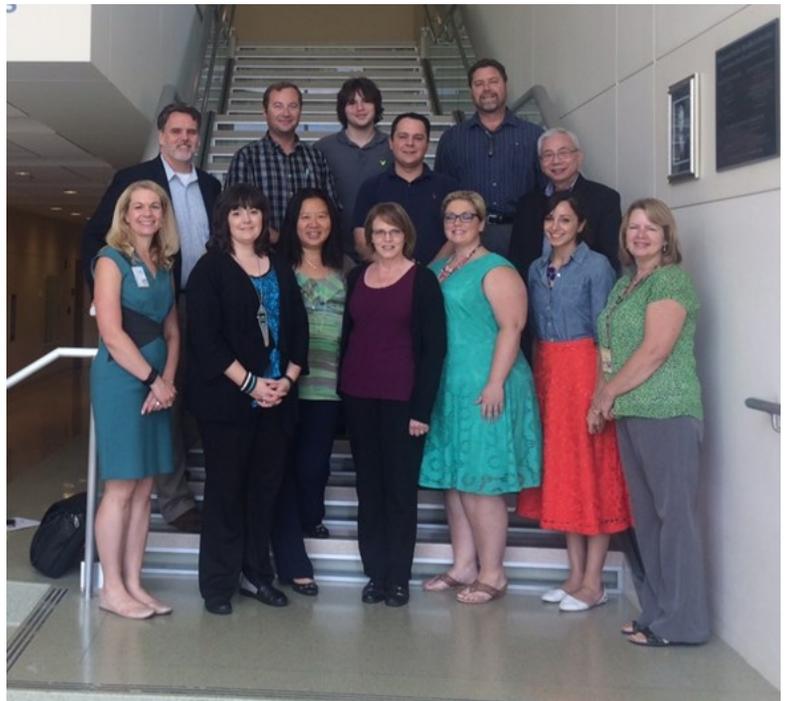
## Molecular Assessment Program (MAP) Site Visit to MSPHL

By: Patrick Hopkins, Retired NBS Unit Chief

Missouri was very fortunate to be provided a MAP site visit late last summer, 2016. The MAP is part of the APHL's Molecular Subcommittee for Newborn Screening (NBS). They follow state programs' efforts in this area and provide technical assistance when requested. MAP site visits are not regulatory and are not even referred to as "evaluations." They are only provided at the request of the state laboratory and there is typically a one to two year waiting period to get the visit due to the large request for these. The MAP team that came to MSPHL included three experts from CDC's Newborn Screening Molecular Branch, two state NBS molecular laboratory experts from the large states of Texas and New York, and one APHL representative.

The MAP visit was perfect timing for MSPHL in that we were just beginning installation and validations for Severe Combined Immunodeficiency (SCID) screening in addition to changing methods to a different 2<sup>nd</sup> tier DNA testing system for Cystic Fibrosis (CF). We also conduct 2<sup>nd</sup> tier DNA testing for our Krabbe screening.

The MAP team experts did an outstanding job of providing a thorough review of our SOPs along with our laboratory set up and testing logistics. They provided guidance and many very helpful suggestions to improve accuracy, efficiency and timeliness in our processes. They made suggestions on how we might want to set up our molecular testing areas to accommodate SCID and CF testing in the same lab spaces. On top of that, they were very pleasant throughout the entire process and were understanding of our situation and how our laboratory operates with the collaboration between the NBS Unit and the Molecular Unit. We are very thankful to the MAP team and have greatly benefited from the expert review process that APHL and CDC have made available.



*Members of the MAP Team and MSPHL staff*

## Bursting the Bubble on SCID in Missouri

By: Keith Bock, Newborn Screening Unit and Joshua Featherston, Molecular Unit

Severe combined immunodeficiency (SCID), commonly referred to as Bubble Boy Disease, is a rare genetic disorder that is often X-Linked and predominantly affects males. The disease became widely known in the 1970s and 80's when a boy with the disease named David Vetter lived in a germ-free, plastic bubble for 12-years. SCID is characterized by the improper development of functional T-cells and B-cells, which results in a newborn child with a dysfunctional immune system. Without a functional immune system, the child lacks the ability to ward off infections and is typically overcome by severe bacterial, viral, and fungal infections early in life. Fortunately, treatment for SCID is available via bone marrow transplantation and has a very high success rate (95%) if given within the first three months of life. If left untreated, babies with SCID typically die within one year of birth due to severe, reoccurring infections. Due to the high consequences of untreated SCID, early and rapid detection of this disorder is an essential component in the effective treatment of these children.



*The 'Hal 9000' liquid handling robot is used for high throughput SCID testing.*

Routine screening for SCID is typically performed during the Newborn Screening (NBS) process at State Public Health Laboratories across the United States. The methodology primarily being used for SCID testing is real-time polymerase chain reaction (RT-PCR), which detects and measures the presence of T-cell receptor excision circles (TRECs), which are a by-product of normal T-cell production in the developing immune system. This "TREC Assay" is highly effective at detecting babies with SCID, as they display very low to no TREC count. In early 2016, the Missouri State Legislature passed Missouri House Bill No. 1682 which stated that the Missouri

Department of Health and Senior Services (DHSS) would begin screening for SCID by January 1, 2017.

The successful implementation of this screening test in Missouri employed the efforts of both the Newborn Screening and Molecular Units at the MSPHL: the NBS Unit was familiar with the intricacies of the NBS Program and reporting of NBS disorders, while the Molecular Unit was specialized in performing molecular assays such as the RT-PCR that would be used for the SCID test. Additionally, a SCID Task Force was established which consisted of immunologists, transplant specialists & other health care providers located throughout the state, DHSS Newborn Screening Program staff, MSPHL staff, and the parent of a child who suffered from SCID. The task force met on a monthly basis to discuss the implementation of the TREC assay. This joint collaboration ensured the implementation of the new assay would address multiple needs from a variety of perspectives.

In July of 2016, employees from both the Molecular and NBS units traveled to the

Centers for Disease Control and Prevention (CDC) in Atlanta, GA, in preparation for the TREC assay's implementation at the MSPHL. Matthew Sinn, Dennis Schmitz, Keith Bock, and Joshua Featherston attended this intensive, week-long course which covered a general, working knowledge on the SCID disorder itself, as well as a highly in-depth training on the theory and application of the TREC assay. Also while in Atlanta, the MSPHL staff visited the Georgia Public Health Laboratory (GPHL) to observe the assay in a high-throughput laboratory setting. This proved to be extremely valuable, as it gave us practical ideas as to how to implement this completely new assay at the MSPHL.

Once training was completed, the NBS and Molecular units began to intensify their efforts to make the TREC assay a reality for the state of Missouri. Weekly meetings were conducted which allowed for valuable feedback, strategic planning, and coordination between both units. The Newborn Screening unit began laying the groundwork for the reporting of TREC results using their LIMS system (Neometrics), while the Molecular unit began the process of validating the TREC assay.



*Members of the MSPHL staff with Georgia State Public Health Laboratory Staff and Francis Lee of CDC (far Right).*



*Ralph Horne, Molecular, loads master mix onto the liquid handling robot that will be used for testing. Molecular tests approximately 300 newborn screening samples each day.*

One hurdle to overcome was how to combat the effects of static on the tiny, 1.5 mm spots that are used for this test. Another significant hurdle for the Molecular unit was working out the logistics of performing the daily high-volume testing that is typical with newborn screening. Thousands of patient samples were tested during the validation process. Using this large amount of available population data, the Molecular and NBS units collaborated and developed the testing reportable ranges for the startup of the screening assay.

As of January 1, 2017, the Molecular and NBS units began the full population pilot screening for SCID with the TREC assay. Since then, every baby born in the state of Missouri has been screened and over 25,000 specimens have been tested for SCID. It is estimated that the MSPHL will detect one or two babies per year with SCID, along with a few other babies with milder variant forms of SCID.

Although this has been a huge undertaking for both the Newborn Screening and Molecular units, it was made possible because of the commitment each unit had to the successful implementation of this assay. This, along with a strong sense of teamwork, helped make the implementation of the TREC assay a reality.

## CRE, The Nightmare Bacteria: A Serious Threat in Antimicrobial Resistance

Steve Gladbach and David Byrd, Microbiology

Carbapenem-resistant *Enterobacteriaceae* (CRE) is a growing threat to the general public's health and one of the most significant areas of concern for Antimicrobial-Resistance (AR) dangers to the public well-being. This is due to the carbapenem class of antibiotics (ertapenem, meropenem, doripenem and imipenem) being the drug of "last resort" in the US. Most CREs are resistant to many other antibiotics as well. Further, if the mechanism of carbapenem resistance is carbapenemase production (carbapenemase is a type of enzyme that breaks the antibiotic down), then this resistance is easily transferred to other nearby bacteria. The worry is that Carbapenemase-Producing CREs (CP-CREs) may become quite common place due to this type of resistance being so easily transmissible. The further danger is that the CP-CREs will also create other types of bacteria that are resistant to this class of antibiotics (*Pseudomonas sp.*, *Acinetobacter sp.*, etc.).

The simple transfer of resistance is made easier by the fact that the gene that encodes the data to make this type of enzyme is on a plasmid. A plasmid is a smaller, mobile piece of DNA that can be passed from one bacterium to another.

*Enterobacteriaceae* is a family of bacteria that includes *E. coli*, *Klebsiella*, *Enterobacter* and many other bacteria typically found in the human digestive tract.

In March of 2015, President Obama released the National Action Plan for Combating Antimicrobial Resistant Bacteria (CARB) and CDC responded with the AR Solutions initiative. As a result the US congress appropriated 160 million dollars to address AR with an ambitious, transformative approach including \$65 million to be distributed to State and Local Health Agency's through the Epidemiology and Laboratory Capacity (ELC) grant. The money is distributed so that public health can develop methods for early detection of new resistance and robust prevention efforts like rapid outbreak detection and response. This early detection process involves submission of suspect organisms from health care facilities; testing of those isolates for CRE and carbapenemase production via phenotypic test methods as well as testing for the genes that can cause carbapenemase production via Polymerase Chain Reaction (PCR); and reporting those results to state and local epidemiologists so they can track and investigate with the hope of limiting transmission.

The MSPHL's Microbiology Unit has recently validated the CRE detection via disk diffusion as well as validation of a carbapenemase production detection process provided by the CDC. The Molecular Unit of the MSPHL is currently validating the PCR tests for four of the most common genes that account for carbapenemase production. Once the tests are ready to run routinely, the State Public Health Laboratory will solicit CRE (specifically Carbapenem-Resistant *E. coli*, *Klebsiella pneumoniae*, *Klebsiella oxytoca*, and *Enterobacter spp.*) from health care facilities and report results to the epidemiologists daily and distribute monthly reports to the CDC.

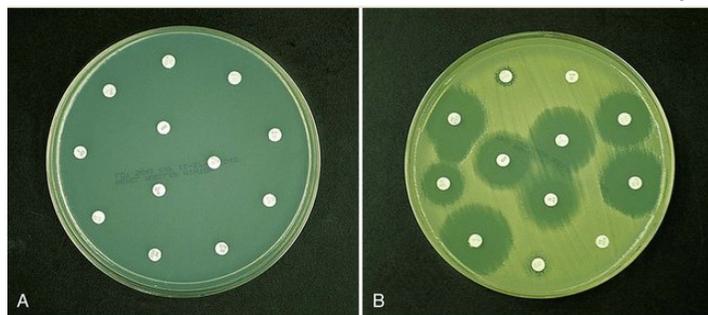


Plate A shows different antibiotic disks on plate prior to incubation.  
Plate B shows growth inhibition or resistance around disks.  
Imagine from <https://clinicalgate.com/laboratory-methods-and-strategies-for-antimicrobial-susceptibility-testing-2/>

## The Environmental Bacteriology (EB) Unit receives ISO/IEC 17025 accreditation

Have you been walking to the breakroom recently and noticed a new shiny blue and gold plaque hanging in the hallway? Have you wondered what this is about? In 2012, the MSPHL EB unit applied and received a FDA ISO/IEC 17025 grant. ISO/IEC 17025:2005 is an International Standard designed for the accreditation of testing laboratories. It includes quality management system requirements along



*Environmental Bacteriology Unit staff celebrate receiving their ISO/IEC 17025 accreditation.*

with technical

requirements to ensure that each laboratory is equipped to perform particular test activities. The objective of the accreditation program is to ensure quality laboratory testing in support of state or federal food safety surveillance programs. The MSPHL EB unit worked diligently to meet the ISO/IEC standards with the help of Laura Naught and our FDA project officers. This included adding quality system documents, revising worksheets and standard operating procedures. In October 2016, after much hard work, the MSPHL applied to Perry Johnson Laboratory Accreditation, Inc. under four food testing methods. In December 2016 the MSPHL food microbiological testing program received its accreditation to the ISO/

IEC 17025:2005. So if you are headed to the break room, stop and see the very nice plaque hanging on the wall and the great accomplishment it represents.

## Environmental Bacteriology Unit Receives Accolades



Staff from the Missouri State Public Health Laboratory and Bureau of Environmental Health Services received five awards from the FDA for “Leveraging and Collaborating” on numerous large scale outbreaks and food recall actions. Additionally, one of the awards recognized Missouri for being a Pilot State for Manufactured Food Regulatory Program Standards. Pictured left to right are DHSS Employees: Mark Buxton, Ashley Mehmert, Leon Luebbering, Eric Hueste and Mark Jenkerson.

## From Outreach Activity to Laboratory Scientist

By: Amy Pierce, Training Coordinator

Over the last few years the MSPHL has been working to increase its outreach to others in the scientific and clinical communities, law enforcement and first responders, the public and students. It is important that each partner and community member understands the vital role that public health plays in their lives. Specifically, the MSPHL strives to remove the mystery behind the public health laboratory. The intent is to educate on the type of testing that is done and to demonstrate how the MSPHL works in service of the community.

One group in particular, the students, have proven to be a very rewarding group in our outreach efforts. College and high school classes have been visiting the MSPHL, touring the Laboratory, and learning about laboratory science. These visits have been an opportunity to educate students about the Public Health Laboratory and introduce this potential career path. One such encounter has been especially beneficial.

Jessica Klutts participated in the first ever MSPHL high school outreach day in April 2011. A class of genetics students from an area high school visited the MSPHL to learn about the Newborn Screening unit. In the course of their visit they heard about the various tests the MSPHL performs. They got a close up look at the Newborn Screening unit laboratories and equipment, and had the opportunity to interact with the scientists.

After graduating from college in 2016, Jessica Klutts joined the MSPHL's scientists, accepting a position in the Molecular unit. She is a welcome addition to the MSPHL and her story underlines the impact Public Health Laboratory outreach can have, even on students as young as high school.



Jessica Klutts. Molecular Unit

### **Q&A with Jessica:**

**MSPHL:** You were in the original high school outreach class in 2011. Do you have any memories about that you would like to share?

**Jessica:** *I remember sitting in the conference room with my class while a couple staff talked to us about the lab. I was surprised by how much the lab did for the state of Missouri, but we had no idea as members of the general public.*

**MSPHL:** Did the outreach activity impact your decision to go into the science field?

**Jessica:** *I was in AP Biology at that time, so I knew I wanted to go into the science field. What the outreach did open up was that there are lab jobs available. Most of my classmates were thinking about medical school. As a high school student, that seemed like the obvious science career to join. After the lab visit, I started looking into more about the CDC and other lab careers. Looking back, maybe it even influenced my decision to join the Bioterrorism seminar my freshman year of college!*

**MSPHL:** Did the outreach activity impact your decision to apply for a job here?

**Jessica:** *I think so, among other things. I felt a degree of comfort because I had visited the lab before.*

**MSPHL:** How has your time been working here at the MSPHL?

**Jessica:** *I love it! Every glowing review from other staff when I first started was not exaggerated! I enjoy coming to work in the Molecular Unit every day because there's always a new challenge and opportunity to learn something. I get to talk to coworkers that are interested in science like I am, and other topics of interest as well.*

**MSPHL:** Is there anything else you would like to say about the outreach activity or the MSPHL?

**Jessica:** *I think outreach is a great idea! I was a good student, and hardworking, but "scientist" was an intimidating description to me. But really, it seems to be a more accessible career than I thought!*

## Three Employees Honored as DHSS Employees of the Month



Amy Pierce (L) with former Director Peter Lyskowski

Amy Pierce, MSPHL Training Coordinator, was named the DHSS December Employee of the Month. Amy is an essential part of the MSPHL. She has vast experience and knowledge of the Laboratory which has allowed her to fill in multiple times in the completion of Select Agent Documents and accident reports in the absence of the LPES Director. She provides valuable trainings such as Packaging and Shipping of Infectious Substances, Biosafety/Biosecurity and also a Rule Out Refer of Select Agents training for clinical laboratories. The Rule Out Refer course is extremely labor intensive. That course showed immediate benefit when the week after a participant attended, they isolated a select agent at their laboratory and due to the training, they worked the specimen up in a safety cabinet and avoided potential exposures to their staff.

Megan Eisterhold, MSPHL Public Health Laboratory Scientist Immunology was named the DHSS February Employee of the Month. Dana Strope, the nominator wrote, "I am nominating Megan Eisterhold for her dedication and her willingness to help others. She might seem quiet, but when she is not here her absence is definitely noticed. She shows great attention to detail and does a thorough job of performing her work functions. She takes ownership in her testing and takes time to help fellow employees when help is needed. She is very conscientious in taking leave making sure that the unit is covered before asking for time off. She has even helped a fellow employee track his/her leave using the attendance card on DELTA website. Megan is a self-motivator and comes to work ready to execute her job to her high standard every day."



Megan Eisterhold (L) with DHSS Director Dr. Randall Williams.



Alan Schaffer (L) with DHSS Director Dr. Randall Williams.

Alan Schaffer, MSPHL Chemistry Unit Chief, was named the DHSS April Employee of the Month. Alan Schaffer has emerged as a subject matter expert with regards to hazardous waste identification and disposal and has performed those duties well beyond the requirements of his position. Given Alan's expertise in Chemistry, he has been called upon numerous times to assess waste that needs identified or disposed of and now directly works with central services to assist them with the labeling, storage and removal of hazardous waste. His knowledge regarding the chemicals and identification has been invaluable. He spends a lot of time determining how different reagents and related chemicals should be handled when they need to be disposed of and takes it upon himself to work with units to assist them in storage and disposal. This is not a normal just function for Alan but he has taken ownership of the laboratory's process and understands the importance of why the MSPHL needs to have a robust hazardous waste identification and disposal process in place.



## Lab Tweetings

(around the laboratory in approximately 140 characters)



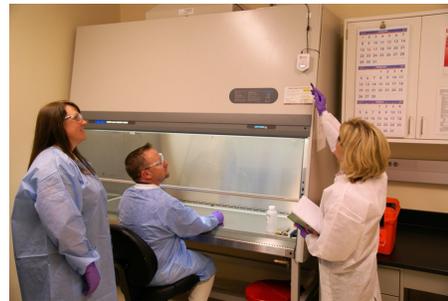
### Environmental Bacteriology

Leon Luebbing of the Missouri State Public Health Laboratory participated in a round table discussion with delegates visiting from the Ukraine regarding state and national perspectives on milk and food product safety, sample collection, testing methodology and laboratory certification.



### LPES

MSPHL working with bio-risk management consultant, Sharpe Solutions International, LLC., to enhance and increase the capacity of the MSPHL and MOLRN partner laboratories. Biosafety consultant Debra Sharpe working with MSPHL Safety Officer Russ Drury and Training Coordinator Amy Pierce.



### MSPHL

DHSS American Red Cross Blood Drive held at the Missouri State Public Health Laboratory. Fran Thompson, Chemistry Unit, of the MSPHL was one of many staff who participated.



### Immunology

The Geenius assay was implemented in October 2016. This assay is used as a supplementary test in the HIV diagnostic testing algorithm. The Geenius Assay confirms the presence of antibodies to HIV-1 and HIV-2 for those samples found repeatedly reactive by the HIV screening test. The results are read and interpreted by the Geenius Reader and software. If results are negative or indeterminate, the sample will need a nucleic acid amplification test (NAT) performed to rule out an acute HIV infection.



### OpenELIS LIMS

The MSPHL is currently working to implement a new and improved LIMS system, OpenELIS2 that will provide enhanced features for staff and customers. All laboratory environmental testing and blood lead are currently in the new system with additional coming on-line soon. Customers will enjoy a new web portal that will increase turnaround time for access to result reports.



## Staff happenings in the Laboratory

## Happy Retirement

After 36 years of service to the State of Missouri with 33 of those years at the MSPHL Jessica Connell has stepped into retirement. Jessica was an integral part of the Central Services Unit and will be truly missed.



## Lab Blab

### New Employees

- **Brent Gaw** – Central Services
- **Joe Prewett** – Central Services
- **Eric Sarrazin** – Virology
- **Veronica Tuthill** – Newborn Screening
- **Keenan Webster** – Central Services

### Promotions

**Darla Eiken**—Newborn Screening promoted to Unit Chief; **Alex Haslag**—Newborn Screening to Sr. PHLS; **Heather Moser**—Central Services, to AOSA; **Bonnie Ricks**—Newborn Screening to Broadband Manager I.

### Conferences & Trainings

-**Jackie Pfenenger** (Central Services), **Brian Inman** (Central Services) and **Alan Schaffer** (Chemistry) attended RCRA Hazardous Waste Management Training in St. Louis, MO.

-**Brian Inman** (Central Services) attended Hazmat Ground and Air Shipper Training.

-**Steve Gladbach** (Microbiology) went to the APHL Food Safety Committee meeting in Maryland, the HAI (Healthcare Acquired Infections)/ARLN (Antibiotic Resistance Lab Network ELC/ACA grant meeting in march at CDC in Atlanta, GA and the ELC/ACA grant meeting at CDC in Atlanta, GA. He also attended the Annual Meeting in Providence, RI along with **Shondra Johnson** (LIMS), **Jessie Bauer** (Molecular) and **Bill Whitmar** (Director).

-**David Byrd** (Microbiology) attended the CRE training in St. Paul, MN and the MICROBE (ASM conference) New Orleans, LA.

-**Brigid Cepauskas** (Microbiology) and **Laura Naught** (Admin) went to the “Joint Criminal Epidemiological Investigations” in St. Louis, MO.

-**Darla Eiken** (Newborn) attended Gene Sequencing in Public Health Newborn Screening Meeting February in Atlanta, GA.

-**Tracy Klug** (Newborn) and **Josh Featherston** (Molecular) graduated from the year long DHSS leadership program Next Step Leadership. Tracy also attended the APHL National New Disorders In-Person meeting in Bethesda, MD and Hunter’s Hope Medical Symposium in Ellicottville, NY.

-**Alan Jarrell** (Tuberculosis) attended the CDC Workshop “16S rRNA Sequence Based Bacterial Identification” in Atlanta, GA

-**Matthew Barry** (Tuberculosis) attended the SWACM Training “Gram Stain: Proficiency in Diagnostic Interpretation and Results Review” in Kansas City, MO.

-**Mary Menges** (Admin) April 6, 2017 Presented at the American Society for Clinical Laboratory Science- MO Conference in Lake Ozark, “Generations in the Workplace: Preparing for the Demographic Shift” July 10, 2017 Presented at the American Medical Technologist National Conference in Kansas City, “Role of the Laboratory in Bioterrorism Response” and the Missouri Rural Health Conference Camdenton, MO.

-**Brianna Medrano** (Chemistry) attended the LRN-C Technical Meeting Richmond, VA.

-**Leon Luebbering** (Environmental Bacteriology) and **Laura Naught** (Admin) attended the MFRPS and FDA ISO Laboratory Collaboration Conference in St. Petersburg, FL. Leon also attended the Kansas City District Four State Meeting in Lenexa, KS, the FD373 Laboratory Evaluation Officers Workshop in Nashville, TN with **Jesse Meller** (Environmental Bacteriology) and the Missouri Food Safety Task Force in St. Louis, MO with **Ashley Mehmert** (Environmental Bacteriology). Ashley also attended the AIFP Conference in Tampa, FL.

-**Jessica Meller** (Environmental Bacteriology) attended FD374 Laboratory Examination of Dairy Product in Indianapolis, IN.

-**Danielle Rawlings** (Environmental Bacteriology) attended LB506 FDA/FERN PCR training in Albany, NY.

-**Derek White** (Environmental Bacteriology) attended the FERN Food Microbiology and Rapid Methods course in St. Paul, MN.

-Several staff members including **Brian Inman** (Central Services), **Steve Gladbach** (Microbiology), **Jessie Bauer** (Molecular), **Roy Tu’ua** (Tuberculosis), **Alan Schaffer** (Chemistry), **Dana Strope** (Immunology), **Randy Schillers** (Virology), and **Shondra Johnson** (LIMS) presented at the Laboratory Services Workshop in Cape Girardeau, MO.

-**Matt Sinn** (Molecular) attended the 2017 BioNumerics Workshop for PulseNet and the PulseNet Laboratory Workshop on Next Generation Sequencing at CDC in Atlanta, GA. He also attended th LRN Rapid Methods Training in Denver, MO.

-**Josh Barry** (Molecular) attended AMD day at CDC in Atlanta, GA.

## Introducing Laboratory Employee of the Quarters

By: Roy Tu'ua, TB Unit Chief and S.C.O.P.E. Team Leader

### Quarter I Amy Pierce

Please join me in congratulating **AMY PIERCE** as our Laboratory Employee of the Quarter for the first quarter of 2017!

Amy was selected among her peers for multiple reasons which indicate her commitment to excellence to the laboratory and to the LPES Unit. For instance, Amy was instrumental in the planning and execution of the 2016 Building Exercise. Her experience and knowledge with internal and external partners during the 2010 Building Exercise was an integral component for a

seamless event.

Amy also provides valuable training for clinical laboratories with Packaging and Shipping of Infectious Substances, Biosafety/Biosecurity and Rule out-Refer of Select Agents. The planning and production of these trainings are labor intensive and time consuming with lecture and hands-on laboratory. Amy has also accommodated multiple special requests by local partners for Packaging and Shipping to fulfill their needs with unscheduled trainings.

Amy is also a huge contributor to the expanded outreach programs targeting high school students and peak the student's interest in science by developing interactive and highly educational hands-on activities demonstrating basic skills utilized in the laboratory.

Amy also serves on the Department COOP Committee, multiple SCOPE Teams, and as back-up to the LPES Director on the Public Health Preparedness Advisory Council.



Congratulations Amy!



### Quarter II Alan Schaffer

Please join me in congratulating **ALAN SCHAFFER** as our Laboratory Employee of the Quarter for the second quarter of 2017!

Alan was selected among his peers for his dedication to fulfill the need of the MSPHL to have a robust hazardous waste identification and disposal process management system. Alan has emerged as the subject matter expert for his invaluable knowledge of chemical hazardous waste identification and disposal and has performed these duties well beyond the requirements of his position. While serving on the MSPHL Waste Management Committee, Alan has been consulted numerous times

to assess waste that needs identified or disposed of and now directly works with Central Service to assist them with the proper labeling, storage and removal of hazardous waste. Alan spent countless times determining how different reagents and related chemicals should be handled with proper disposal. Alan has worked with individual units to assist them with their chemical hazards and has taken ownership of the laboratory's process and understands the importance of this process. Alan has also assisted the laboratory in saving money by determining certain hazardous wastes could be pooled and deciding that some waste is not waste at all so it does not need to be removed. He also

determined that some waste can be neutralized in-house within the Chemistry Unit saving the cost of disposal.

Alan has been a vital component within the MSPHL Waste Management Committee and is going above and beyond to ensure that the MSPHL is not only providing a safe working environment by expanding staff knowledge of chemicals and materials, but also cognizant of the environment by ensuring proper hazardous waste disposal per regulations.



Congratulations Alan!

## Total Eclipse of Jefferson City, MO August 21st, 2017

The City of Jefferson was fortunate enough to be part of the path of totality for the August 21st, 2017 Total Solar Eclipse. Jefferson City has been preparing for the total solar eclipse for over a year and half and the day did not disappoint. While the weather forecast called for cloudy skies the morning sunrise was perfect and there were clear skies for the thousands of spectators who got to enjoy the spectacular show.

The weekend leading up to the event was filled with family activities from NASA, local astronomy clubs, a corn maze, carnival and lots of music and food.

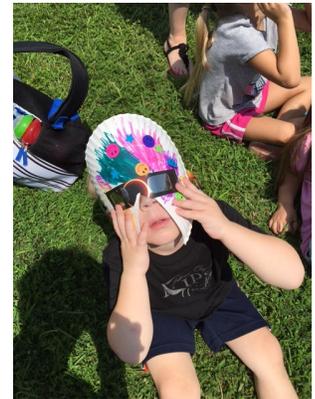
Laboratory staff got to meet people from all over the United States who were in town to see the total eclipse and we were proud to show off our town. Jefferson City got to witness the total eclipse for 2 minutes and 29 seconds. According to [capitaleclipse.org](http://capitaleclipse.org) This is the first total eclipse of the sun to occur in Missouri since Aug. 7, 1869, a 148 year gap. We are in luck though, there will be another total eclipse that will pass through Missouri's boot heel on April 8th, 2024. Jefferson City will be just outside the path of totality but it will still be another spectacular show, weather permitting of course.



Jefferson City was in the direct path of totality for the August 21st Total Solar Eclipse. Picture courtesy of <http://capitaleclipse.org/>



Bryan Menges, nephew of Mary Menges, shared this picture of the Total Solar Eclipse on August 21st.



Anderson, Laura Naught's son, enjoys the eclipse through his homemade eclipse glasses holder with friends at school.

Editorial Board for *Beyond The Scope*  
Russ Drury, Shondra Johnson, Sandy Jones, Mike Massman, Mary Menges,  
Laura Naught, Amy Pierce, Bill Whitmar

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