



Tennessee Department of Health Public Health Laboratory Newsletter



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Celebrating 30 years at RS Gass

May 2016 marks the 30th anniversary of the relocation of the Tennessee Department of Health, Division of Laboratory Services to the Dr. R.S. Gass Building in Nashville. This is the fourth location of the laboratory in its 102 year history as a full time public health laboratory. Over the years the testing performed by the laboratory has changed, and test volumes have steadily increased as new diseases and threats were identified and testing capabilities increased. The number of specimens examined by the laboratory has grown over the years, from 18,774 in 1923-24, to 48,148 in 1926-27. By 1963-64, that number had climbed to 673,994. In 2015, over 1 million tests were tested per year. Testing has progressed from basic microscopy and rudimentary culture of microorganism to rapid multiplex screens, DNA

based identification, whole gene sequencing, atomic absorption, and mass spectrometry.

The first state bacteriologist, Dr. Ernest Sangree was employed by the state in 1897. He and his assistant, Dr. Louis Leroy, both worked part-time and were not compensated. After Dr. Sangree's death in 1900, Dr. Leroy was appointed state bacteriologist. He remained in this position until 1905, when Dr. J. William Litterer was appointed state bacteriologist. Beginning in 1913, Dr. Litterer worked part-time for the State, but was receiving nominal pay for his duties. By 1914, the work at the laboratory became a full time operation, and Dr. Litterer was employed as director of the laboratory. Testing was performed under the State Board of Health until 1923. In 1923, the Division of Laboratories of the



Middle TN Chest Disease Hospital



Lab renovation

State Department of Public Health of the State of Tennessee was established. Yet still, the work was described as "not well organized" by 1925. In his

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Important *Campylobacter* and *Cryptosporidium* Specimen Updates

The Reportable Diseases and Events Matrix and The Reportable Diseases and Events List were released on January 1, 2016 with two notable changes. Submission of both *Campylobacter* and *Cryptosporidium* is required. The Reportable Disease Matrix and List can be found at <https://apps.health.tn.gov/ReportableDiseases/>.

Campylobacter: CDC has asked all state public health laboratories to enhance submission of human isolates of *Campylobacter*. All *Campylobacter* samples confirmed by the state public health lab are submitted to CDC for confirmation of species, antimicrobial susceptibility testing, and whole genome sequencing (as needed). The new required submission of *Campylobacter* includes any sample that is positive for *Campylobacter* by any method (EIA, PCR or culture). The following list contains acceptable sample types for submission:

- Stools in Cary-Blair preservative sent within four days of collection (Para-Pak, MCC, etc.)
- Stools in Gram negative broth
- Isolates on chocolate or blood agar slants (preferably in a micro-aerophilic package)
- Swab of isolate growth from culture inserted in Cary-Blair agar tube
- Thioglycollate tube anaerobically sealed with Vaspar (or other suitable wax-like substance)

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Important *Campylobacter* and *Cryptosporidium* Specimen Update (cont'd)

Maintaining *Campylobacter* viability is extremely difficult. In order to increase the viability of the organism, it is recommended the sample be added to an appropriate preservative within three hours of collection and transported to state PHL as soon as testing is completed. Holding samples and sending them in batch shipments is not recommended. All *Campylobacter* testing will be performed at the Nashville laboratory.

*Submitted by Sheri Roberts
Supervisor Enteric Microbiology*

Shipping Addresses for *Campylobacter* samples:

By Mail to the Nashville Laboratory

Tennessee Dept. of Health, Laboratory Services
P.O. Box 305130
Nashville, TN 37230

By FedEx and UPS to the Nashville Laboratory

Tennessee Dept. of Health, Laboratory Services
630 Hart Lane
Nashville, TN 37216

Cryptosporidium: As of January 1, 2016, all positive *Cryptosporidium* samples are required to be sent to the Tennessee Department of Health—Knoxville Regional Laboratory. This is in compliance with the National Molecular Surveillance for Cryptosporidium, otherwise known as CryptoNet. This program was established by the CDC to track and subtype the organism to better understand the transmission of the disease. TDH will be sequencing the subtypes of *C.parvum* and *C.hominus*.

In order to subtype the *Cryptosporidium*, a specimen must be sent in a frozen raw stool or in a fixative other than formalin. Stools submitted in FORMALIN are UNACCEPTABLE for this testing because formalin interferes with PCR testing.

Acceptable samples are:

- Unfixed stools
 - Stored at 4°C for less than one month
 - Frozen at -20°C to -70°C
- Stools stored in the following transport mediums for less than a month
 - Cary Blair (4°C)
 - ZincPVA (Room Temperature)
 - Total Fix (Room Temperature)
 - Potassium dichromate (4°C)

Please send stools in original vials or a minimum of 2 mL of stool per sample. Samples should be shipped with cold packs to maintain storage requirements. The original PCR testing will be performed in the Knoxville Regional Lab. The specimen will be subsequently sent to the Nashville lab for further subtyping and sequencing. We are currently notifying all hospitals and clinical labs of the media submission requirements. Questions concerning *Cryptosporidium* samples can be directed to the Knoxville Regional Laboratory at 865-549-5201.

*Submitted by Tracey Woodard
Supervisor Molecular Biology*

Shipping Address for *Cryptosporidium* samples:

By Mail to the Knoxville Laboratory

Knoxville Regional Laboratory
P.O. Box 59019
Knoxville, TN 379250

By FedEx or UPS to the Knoxville Laboratory

Knoxville Regional Laboratory
2101 Medical Center Way
Knoxville, TN 37920

Drug Susceptibility Panel Changes For *Mycobacteria tuberculosis*

The Tennessee Department of Health, Division of Laboratory Services will be discontinuing Streptomycin from the initial drug susceptibility panel for *Mycobacteria tuberculosis*. This change is being implemented in response to recommendations by the Centers for Disease Control and Prevention.

As of March 1, 2016 the standard drug susceptibility panel performed at Laboratory Services will include:

- Isoniazid 0.1µg/ml
- Rifampin 1.0µg/ml
- Ethambutol 5.0 µg/ml
- Pyrazinamide (PZA) 100.0 µg/ml

*Submitted by Dorothy Baynham
Manager Special Microbiology*

Meet the New Sentinel Lab Coordinator



Rusty Bowden has been working at the TDH Division of Laboratory Services for 3 months as our new Sentinel Laboratory Preparedness Coordinator/Quality Assurance Coordinator and came to the TDH with 32 years of experience in the Clinical Laboratory. Prior to coming to the State Lab, he held various positions from 1983 -1997 in all areas of the lab including Supervisory and Assistant Section head roles within the Microbiology labs at Baptist Hospital. He went on to manage the clinical labs at Three Rivers Hospital in Waverly, TN from 1997 - 1999. From 1999 - 2004, he Managed several areas of the Diagnostic Laboratories at Vanderbilt University Medical

Center (VUMC) and worked in the VUMC Microbiology lab from 2005 - 2015. Rusty earned his Bachelor's degree in Biology/ Medical Technology from University of Tennessee at Chattanooga. He attended Erlanger Medical Technology School to obtain his licensure and went on to earn his General Supervisors license. He completed his Master of Science in Health Services Administration and graduated with Academic Honors from St. Francis College in 1996. He brings experience, knowledge, and a genuine passion for the field of Medical Technology to the Microbiology labs here at the TDH.



**Microbiologist 4 (CERT)
Serology / Virology
Manager**

**Microbiologist 2 (CERT)
Multiple Departments**

Microbiologist Job Summary: Under general supervision, is responsible for routine laboratory work of moderate difficulty as it relates to clinical chemistry, microbiological, environmental and or molecular areas; and performs other tasks as required.

Job openings and applications can be found at:
<http://agency.governmentjobs.com/tennessee/default.cfm>

Dr. Woron Selected to Serve on NCBRT Internal Public Health Advisory Council

Dr. Amy Woron has been an instructor for the Louisiana State University NCBRT National Center for Biomedical Research and Training since 2011. The NCBRT is a DHS training partner providing high-quality training to emergency responders throughout the United States and its territories under the NCBRT's Homeland Security National Training Cooperative

Agreement.

Dr. Woron is a certified instructor in A Team Approach for Foodborne Outbreak Response and the Instructor Development Workshop. She was on the development team and is an instructor for Managing Food Emergencies: Strategies for a Community Response. She was selected by her colleagues and NCBRT staff to serve on the Food & Ag portion of the

NCBRT Internal Public Health Advisory Council. The purpose of the Council is to provide advice and recommendations to the NCBRT to enhance the development and delivery of biological threat, food and agricultural training. Her first Council meeting was held August 19-20 in Washington DC. For more information on NCBRT training, please visit www.ncbrt.lsu.edu



Workshop News: Basic Diagnostic Blood Parasitology: Is it Malaria?

Malarial infections are acquired through natural vector borne transmission and contaminated blood products. Approximately one half of the world's population is living in a malarial endemic region. These regions are also endemic to highly infectious diseases such as Ebola Virus Diseases. When a patient presents with symptoms that are indicative of either of these diseases, it is

imperative that laboratory testing be offered to allow accurate diagnosis of the infectious agent. When clinically indicated, laboratory testing for malaria should be performed immediately at the local sentinel healthcare facility.

On January 28th, laboratory personnel from several facilities throughout the state participated in a wet workshop aimed at identifying malaria.

Tennessee Department of Health laboratory personnel Natasha Lindahl and Dorothy Baynham conducted the workshop. The workshop instructed participants on how to safely detect and identify malarial organisms using microscopy and rapid test. The lecture and hands-on laboratory targeted *Plasmodium* and *Babesia* spp. and appropriate biosafety.



January 28, 2016 Malarial Workshop Participants and Instructors

Proper Collection and Submission of Ova and Parasite Samples

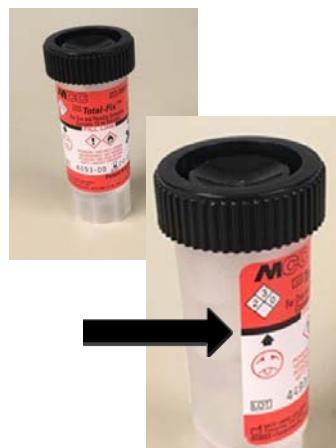
When submitting a stool sample to the State Lab for Ova and Parasite Exam, please keep in mind that proper sample collection, correct culture medium selection and sample volume addition is critical for satisfactory results.

Patients should not use antacids, barium, bismuth, antibiotics, antimalarial agents, antidiarrheal medication or laxatives prior to specimen collection. Wait 5-10 days after taking any of these medications to collect a specimen. Wait 14 days after the use of barium for

collection of sample. Stool specimens should be collected in a manner to avoid contamination with urine or water.

The Total-Fix Solution with the black top is intended for Ova and Parasite testing only. If additional enteric pathogen testing is required, please use the appropriate collection containers. Avoid contact with fluid in the vial and keep out of the reach of children. Fill the vial with enough stool to bring

the liquid level to the "FILL" line on the vial. DO NOT EXCEED THE FILL LINE. Mix the sample by stirring with the provided spoon. Recap vial and ensure that it is closed. Shake the vial until the contents are well mixed. Label the sample with the appropriate patient demographics including two unique patient identifiers, and submit along with the test requisition or electronic order to the laboratory.



Submitted by Natasha Lindahl
Supervisor Special Microbiology

Upcoming Continuing Education Workshops

2016 Packaging and Shipping Workshops

- Johnson City—April 19
- Knoxville—April 20
- Chattanooga—May 24
- Cookeville—June 20
- Nashville: July 27
- Memphis—September 27
- Jackson—September 28



Tennessee Department of Health Division of Laboratory Services will be hosting packaging and shipping workshops at several locations throughout the year. Registration forms can be downloaded from:

http://www.tn.gov/assets/entities/health/attachments/Updated_PS_Flyer_2016_final.pdf

For more upcoming workshops and continuing education opportunities, visit
the Lab Services Continuing Education and Workshop webpage:
<http://www.tn.gov/health/article/lab-education>

Meet the New Training Coordinator



Stephanie Poindexter is the new Training Coordinator for Laboratory Services. She has been with Laboratory Services for six and a half years. In her time with TDH, she has worked as a Microbiologist in Newborn Screening and as a Microbiologist Supervisor of Vector Borne Diseases. Stephanie earned her Bachelor's of Science degree in Medical Technology from Austin Peay State University. She also earned her Masters of Arts in Teaching from Austin Peay State University. Stephanie has a passion for training and is available to discuss your training needs.

Meet the New Knoxville Regional Laboratory Director



George Dizikes, PhD, joined the Tennessee Department of Health Knoxville Regional Laboratory as its Director on September 8, 2015. Prior to coming to Knoxville, Dr. Dizikes spent nineteen years with the Illinois Department of Public Health laboratory at Chicago, where he was the laboratory manager, supervised the molecular diagnostics and newborn screening

sections, and served as CLIA director. Dr. Dizikes received his bachelor's degree in microbiology from the University of Illinois and his Microbiology PhD from the University of Minnesota. He then completed a post-doctoral fellowship at UCLA on the genetics of metabolic diseases. Dr. Dizikes serves on the Association of Public Health Laboratories (APHL)

Sexually Transmitted Diseases Subcommittee and the APHL Committee on Newborn Screening and Genetics in Public Health. He is also a member of the Laboratory Standards & Procedures Subcommittee and the Timeliness Workgroup of the U S Department of Health and Human Services Secretary's Advisory Committee on Heritable Disorders in Newborns and Children.

Zika Virus Specimen Submission

The Tennessee Department of Health alerts people traveling to countries with ongoing Zika virus transmission to protect themselves during travel and when returning to Tennessee. Zika virus is spread primarily through bites from infected mosquitoes. Currently there is no vaccine to prevent Zika virus disease and no specific medicine to treat it. The disease is typically mild but can be severe in some cases and pregnant women. Links to resources from both Tennessee Department of Health and the Centers for Disease Control and Prevention can be found at <http://tn.gov/health/topic/zika-virus>.

More detailed reportable disease information can be found at <https://apps.health.tn.gov/ReportableDiseases/ReportableDisease.aspx/HealthcareDescription>.

Laboratory Testing Guidance:

- All specimens submitted for Zika virus testing must be pre-approved by a Regional Health Officer.

- Samples may not be submitted without prior consultation with the Regional Health Officer.
- Contact your Local/Regional Health Department for further information and test authorization.
- Collect 2.0 mL of serum (required for testing). Ship specimen in a sterile plastic tube with a tightly-sealing screw cap.
 - If a sterile plastic tube with a tightly-sealing screw cap is not available, a red-top vacutainer can be used.
 - If within 7 days of symptom onset, and if possible, also collect 10.0 mL of urine (optional). Urine is being requested in addition to serum to evaluate if urine is a better specimen for PCR.
- Each specimen should be kept cold not frozen.
 - The specimens should be placed in an insulated container with blue ice packs.
 - Additional blue ice packs should be used in the summer to ensure specimen integrity in hot weather.

Only after obtaining Regional Health Officer authorization, ship the specimens along with the [PH-4182](#) form to the Tennessee Department of Health State Lab.

Newborn Screening begins SCID Testing

The State Newborn Screening Laboratory began testing for SCID (Severe Combined Immunodeficiency), also known as the Bubble Boy Disease, on January 1, 2016. Infants with SCID are born without an immune system, and if left untreated will develop severe disease eventually leading to death. The test detects TREC which stands for T-cell receptor excision circles. TREC are products of T-cell maturation. Normal infants will have multiple TREC copies whereas infants with SCID will have very low to undetectable TREC. SCID is treatable if detected early. Treatment is by stem cell transplantation.

For more information of SCID testing please visit:

<https://www.youtube.com/watch?v=MJuqIC5LXY&feature=youtu.be>

Knoxville Regional Lab News

The Knoxville Regional Laboratory is now back online for LRN Testing following repair of the Biological Safety Cabinet in the BSL-3 lab.

Congratulations!

TDH School of Microbiology

Nicole Braun

Class of 2015!

Andrew Lux

Nashville Welcomes New Staff to Laboratory Services!

February 2015

Valerie Ragland: Newborn Screening
Ronald Trubilowicz: Enterics

March 2015

William Pruitt: Admin Secretary

June 2015

Monna Jedd: Special Microbiology
Alexandria Smith: Inorganic Chemistry

August 2015

Lindsay Jolly: Immunoserology
Alan Pugh: Virology

October 2015

Hugh Peeples: Newborn Screening
Russell Bowden: Sentinel
Laboratory Coordinator
Jennifer Erlendsson: Immunoserology

January 2016

Whitney Sapp: Microbiologist Intern
Emily Holodnick: Microbiologist Intern
Ryan Craven: Microbiologist Intern



Congratulations on your promotions!

February 2015

Robin Rasnic: Bacteriology Supervisor

February 2015

Linda Thomas: Molecular & Enterics Manager

May 2015

Tracey Woodard: Molecular Supervisor

October 2015

Luz Castro Maderal: Environmental Lab
Specimen Coordinator

November 2015

Gwendolyn McKee: Newborn Screening Supervisor
James Roberts: Aquatic Biologist

December 2015

Dennis Turner: Informatics Clinical Application Coordinator 1
Stephanie Poindexter: State Training Coordinator

January 2016

Nicholas Johnson: Nashville Reporting Office Supervisor

Rolinda Eddings Named Biosafety Officer

Rolinda Eddings is now the Biosafety Officer. This is a new position to public health in TN funded by a Federal grant for Epidemiology and Laboratory Capacity for Infectious Diseases. Rolinda will be collaborating with health care partners across the state by offering tools for risk assessment, standardizing training, best practices, and improvement in reporting of exposure events.



Congratulations on Your Retirement!

Kristine Ripley Ruth Anne Spence
Kenneth Richardson



Department of
Health

Tennessee Department of Health
Division of Laboratory Services
630 Hart Lane
Nashville, TN 37216
615-262-6300

Celebrating 30 years at RS Gass (continued)

report, Dr. Litterer stated that "the central laboratory, at Nashville, had its work done in three different laboratories and the director was on a part-time basis. These three laboratories have since been consolidated in new quarters and full time workers have been employed."

In April of 1935, the Central Laboratory was relocated from 704 Cedar Street (now known as Charlotte Ave.) to 420 Sixth Ave. N. Upon moving to the new laboratory facility, the lab's activities were divided into 5 sections: Administrative, Diagnostic, Bang's disease, supplies and services, and the Biological section. Testing by the Central Laboratory continued to increase. In November of 1954, the Central Laboratory was again moved to the newly built Cordell Hull State Office Building to better suit the needs of the growing laboratory. The bacteriology laboratories occupied the 4th, 5th, and 6th floors, in the north wing. The environmental chemistry laboratories were placed on the 7th floor. The laboratory would remain at Cordell Hull for the next 32 years.

In 1980, Tennessee Laboratory Services was formed by consolidation of the Water Quality Control Laboratory, the Air Pollution Laboratory, the Radiological Health Laboratory, and the Quality Assurance Laboratory with the Microbiology Laboratories. This allowed the departments to work more efficiently due to shared inventory services and central disbursement system of supplies.

In 1985, the closed Middle Tennessee Chest Disease Hospital was renovated to house Laboratory Services. This massive renovation included a complete demolition to the steel structural frame removing all interior walls, utility supplies, HVAC and exhaust systems, and replacing the exterior envelope. It was redesigned and equipped to provide a modern and safe open-concept space for the enhanced testing of the microbiological and environmental laboratories. In May 1986, Laboratory Services moved into the former TB hospital which was renamed for Dr. R.S. Gass, a noted pulmonologist and the Director of Tuberculosis Control when the 224 bed hospital was built and opened in March 1954.

A Viral Word Search

S L D Z F Y D S B A M A E R W K M N I D
I I H C N L W F B W K V D F V S H W D L
C O T H R Z H F P X S I L M O Y N F U J
Z H Q I D N F I K Z C A Z P X E S A J U
V R I C T L T T Y C X H K O S I Z A Y K
Y P D K P A P G P Z F M C R J X E X N W
B W T E U W P J M E S P A S Z X O C F B
V P I N L N T E L Q R S U J E F I X W I
D U E P F E G I H W E G F U N N A B D H
W E J O V J N U H L M R X T F U W T T S
J O N X A T M O N O N O U C L E O S I S E
U Y F G S J L E X Y F E U N Q W U Y X L
W S S E U A J D W J A E M E A S L E S G
D Q W K E E P S D J N C B E P R P H T N
F Y K Q X A F I O Z J R B Y D J O E R I
O I L O P W R B A A S O X M S Y K R U H
U F M B P U U M R V L Y F F J K W P D S
Y S C N C S F Y N A I P J D L S Y E S X
S U R I V O R O N X P F E D I H R S Z Z
V V F H C H B H W E G N U S B D E F O P

Can You Find?

Influenza
Chikungunya
Zika
Chickenpox
Dengue
Ebola
Herpes
Mononucleosis
MERS
Polio
SARS
Shingles
Norovirus
Hepatitis
West Nile
Measles



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Website only