It is truly bittersweet to be writing my last “From the Director’s Chair” article for Lab-Oratory. I thought I would take this opportunity to reflect upon significant changes at the State Laboratory of Public Health (SLPH) during my tenure as Laboratory Director. Many initiatives described below demonstrate the interests and creativity within our management team. Other changes involve establishing new positions because without the proper staffing, new responsibilities and new test methods cannot be carried out successfully to meet programmatic goals and objectives. Most importantly, however, these could not have been accomplished without effective teamwork and strong support from all levels of leadership within the Epidemiology Section and the Division of Public Health.

Looking Back
Planning for the new facility from the original feasibility study, all the way to design to construction, has been a major emphasis and effort. Fortunately, we were able to learn from other public health laboratories that had already completed their move to a new facility, and we incorporated many of these suggestions in our process. We felt it was very important to involve managers and supervisors from the outset so that their laboratories met the testing needs and they felt ownership in the project.
Implementing a new laboratory information management system (LIMS) for both clinical and environmental laboratories at SLPH was a long and challenging project, but resulted in close examination of workflows and areas for improvement. Along with a new LIMS, several key staff became heavily involved in electronic laboratory reporting and learned a great deal about standard messaging of test methods and test results.

Establishing a Quality Assurance Office, including a dedicated laboratory safety officer, to ensure continuous quality improvement and a safe working environment, has been an important and necessary change. Without these staff members, laboratory policies and procedures would not be as consistent across the laboratory Units, and less would have been accomplished. Routine internal audits have been critical to finding gaps and developing corrective actions before external audits occur.

**Laboratory Preparedness:**
Implementing a strategic plan in Bioterrorism and Emerging Pathogens (BTEP) for a three-year period, and increasing quality assurance initiatives with the goal of being ready to respond 24/7–365, has strengthened the laboratory preparedness system in our state. Duty phone drills and internal clinical and environmental proficiency pop testing exercises are examples of these initiatives. Addition of new methods to the BTEP Unit, such as antibiotic sensitivity testing, enhances the tools we have at our disposal. Increasing the number of methods performed by the Chemical Terrorism Unit to 11 distinct methods and three different platforms, as well as being invited to the national LRN-C Level 1 meetings, demonstrates the excellent technical skills of our staff. Increasing outreach to partners, including first responders, has been a priority that will continue to strengthen laboratory preparedness.

**Cancer Cytology:**
The addition of Human Papilloma Virus (HPV) reflex testing as part of cancer cytology program for patients that fit established criteria ensures that women have access to testing for high-risk genotypes. Establishing a pathologist for the Cancer Cytology Unit will not only provide a full-time Technical Supervisor to meet federal regulatory requirements for the specialty of cytology, but will decrease turnaround time and streamline processes within the laboratory, as well as reduce costs. All these changes ultimately benefit our customers and patients seeking care at local health departments.

**Environmental Sciences:** Establishing laboratory services for the new private well water statute ensures that all newly constructed wells are testing for bacterial and inorganic contaminants of public health concern. New positions were required as a result of this initiative, as well as additional instrumentation, to ensure timely and accurate test results for the expected volume of well water samples.

**Laboratory Improvement:** Increasing the number of web-based training opportunities has allowed many more laboratorians across the state to obtain training during times of travel restrictions. In addition, the Lab-Oratory newsletter has been re-energized by new editors and contributors in order to share important information with our customers, partners and colleagues in other states. Finally, enhancing and improving the laboratory competency assessment program for N.C. CLIA contract counties ensures that staff members in local laboratories are confident in their abilities to provide accurate test results.

*Cont. on page 3*
Molecular Diagnostics and Epidemiology: Establishing a dedicated Molecular Diagnostics and Epidemiology Unit improved the internal capacity to develop, implement and transfer molecular methods. As a result, SLPH has generally increased the use of routine molecular diagnostics in our laboratory testing for pathogens such as influenza and Bordetella pertussis, allowing for more rapid and sensitive testing. Employing new DNA fingerprinting methods such as Multi-locus Variable Number Tandem Repeat Analysis (MLVA) to supplement Pulsed-Field Gel Electrophoresis (PFGE) analysis of foodborne pathogens provides rapid information to epidemiologists conducting the investigation.

Microbiology: The use of DNA sequencing to help identify challenging bacterial reference isolates offers additional information to the traditional biochemical methods. Recently implementing DNA-based molecular serotyping for Salmonella isolates will improve turnaround time for serotype results and thus provide information to outbreak investigations in a more timely manner.

Newborn Screening: The addition of Cystic Fibrosis testing as part of the newborn screening panel required new equipment and the addition of two new positions in order to perform both biochemical and DNA tests. For the second time in my tenure, SLPH is in the process of replacing three aging tandem mass spectrometers (MS-MS) while ensuring newborn screening is not interrupted. Because the MS-MS methodology detects the vast majority of NBS disorders, this is a key accomplishment.

Virology/Serology: Last but not least, HIV testing has increased to 240,000 tests per year from 120,000 tests per year, while maintaining the ability to detect acute HIV infections through a complex algorithm. To benefit the national Infertility Prevention Project, laboratory validation of a self-collected vaginal swab sample type for CT/GC testing was completed. This simplifies the ability of a health care provider to obtain a sample and test for important sexually transmitted diseases.

Looking Forward
The SLPH has much to be excited about in the near future. Although it will be a time of great change and many transitions, the opportunities presented will be numerous and I believe will allow SLPH to shine.

The new facility that co-locates the SLPH and the Office of the Chief Medical Examiner is anticipated to be ready to occupy this fall. The new facility is modern, filled with light, well-designed and is set in a pastoral location. The facility reflects the input of staff, improves parking for employees and visitors, and creates opportunities for new collaborations internally and externally.

The Democratic National Convention is scheduled for September 2012 in Charlotte. Many preparations for the SLPH to be ready to respond to any related emergencies, whether natural or man-made, are underway. This planning requires strong collaborations and partnerships with traditional and non-traditional partners to protect the public’s health.

The national Secretary’s Advisory Committee for Heritable Disorders regularly makes recommendations based on scientific and medical evidence, to add disorders to the newborn screening panel. Recently, Severe Combined Immunodeficiency Disorder (SCID) was recommended and we need to make plans for the newborn screening program in our state. The SLPH is in the process of transitioning to new instrumentation to detect hypothyroidism, congenital adrenal hyperplasia, cystic fibrosis, biotinidase deficiency and galactosemia. The blood lead laboratory is in the process of transitioning to a more complex and more sensitive instrument in order to detect a lower target value for blood lead levels in children.

New instrumentation provided with funding from the Public Water Supply Section in the Department of Environment and Natural Resources is being installed in Environmental Sciences. This sophisticated liquid chromatography/mass spectrometer/time of flight instrument provides great capability and sensitivity for detection of contaminants in the case of a threat to drinking water supplies in our state.

Our national organization, the Association of Public Health Laboratories (APHL), will hold its annual national meeting June 2-5, 2013, in Raleigh at the Convention Center downtown. SLPH staff will be involved in the planning of this meeting, which is an exciting opportunity. The APHL annual meeting has sessions directly relevant to all laboratory services that SLPH provides and allows us to showcase our new facility, our city and our state to attendees.

While I am saddened that I will not be here for the exciting future of the SLPH, I leave with the confidence of knowing that the laboratory is in very capable hands. Our laboratory has talented, bright and committed professionals who understand the importance of all the tests and services we provide to the state. In closing, I am proud to have called North Carolina my home for 17 years, and have considered the SLPH as my second family for 15 years. I wish all of you a bright future!

Leslie A. Wolf, PhD, Laboratory Director, NCSLPH
National Medical Laboratory Professionals Week was held April 22-28, 2012. This event is an annual celebration of medical laboratory professionals and pathologists who play a vital role in every aspect of health care. This year’s theme was “Laboratory Professionals Get Results.” Here at the State Laboratory, we took that theme a step further – not only do we get results, but also this year we showed each other exactly how we get those results. Personnel enjoyed a week of exploration and celebration of the various departments. Each section from administration to microbiology provided tours, posters, demonstrations, food, fun, games and detailed conversations explaining the particular duties and day to day tasks performed at the State Laboratory.

A few of the fun facts we learned:

- Cancer Cytology performs the screening and review of Pap Smears from women all over North Carolina. This department screens for various cancers including HPV.

- The Rabies Lab at the SLPH is the only source of diagnostic rabies testing in North Carolina.

- During serology processes, approximately 1000 HIV, 100-150 Hepatitis, 100–150 Rubella and 500 GC/Chlamydia specimens are tested daily.

- The TIGRIS instrumentation has been beneficial to the diagnostic process of GC and Chlamydia processing for the NCSLPH. The electric arm has made it easier to process more HIV specimens with better turnaround times.

- Every baby born in North Carolina is tested for over 30 genetic and metabolic disorders and our state also has a blood lead screening program. All of these tests are performed at the State Laboratory.

- The mailroom and accessioning areas are some of the busiest areas of the lab. Thousands of specimens are processed, separated, and resulted daily. Containers, forms and other supplies are sent to SLPH customers.

- The Microbiology Unit provides clinical and reference bacteriological services to public and private laboratories in North Carolina. Many of the services performed are only available at the NCSLPH or the CDC.

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- The Environmental Sciences Unit ensures that water supplies are safe by analyzing samples from public and private water systems. Analyses are also performed on waste and soil samples, and radiation levels are monitored in air, water, milk, food and other media. The unit also trains, evaluates and certifies laboratories involved in milk and water testing.

- The Bioterrorism and Chemical Terrorism Preparedness Units are very important parts of North Carolina’s safety plan. They are strategically placed throughout the state and work closely with the CDC to keep our citizens safe.

- The Quality Assurance Office is definitely the nuts and bolts of the State Laboratory. They monitor and regulate each section of the lab.

- The Laboratory Improvement Unit fulfills its mission by providing current trainings and continuing education locally and regionally throughout North Carolina, along with technical consultation for county health department laboratories.

For more pictures from Lab Week, please click on the link below!
https://ncpublichealth.ncgovconnect.com/labweek/

*Michaela Harvey-Creech, BS MT*

*Laboratory Improvement Consultant*
As part of a continuing series to highlight the different services provided by the State Laboratory, this edition’s article focuses on the Microbiology Unit. This unit is composed of five distinct laboratories:

- Bacteriology
- Parasitology
- Mycology
- Mycobacteriology
- Scientific Services

The Bacteriology Laboratory is subdivided into three separate labs based on the type of identification performed:

- The Enterics lab receives clinical stool specimens for culture from local health departments, or reference cultures from all over the state. The enteric pathogens, Salmonella, Shigella, Shiga toxin-producing Escherichia coli, Campylobacter, and Yersina are the organisms of interest. Outbreaks, both foodborne and environmental, are a significant part of the work we do assisting Epidemiology in identifying the causative organism. Serotyping is an important part of the identification process and we now serotype by PCR for the Salmonella species.

- Atypical Bacteriology confirms the presence of Neisseria gonorrhoeae, Neisseria meningitidis and Haemophilus influenzae. Serogrouping is performed for the latter two in order to provide additional epidemiological analysis. Difficult to identify reference isolates from around the state are submitted to us for identification. We utilize traditional biochemicals as well as instrumentation detection by carbon source utilization and other assays. In addition, for the more esoteric or inert organisms, 16S genetic sequencing is employed.

- Special Bacteriology provides culture and PCR for the detection of Bordetella pertussis. Culture for Bordetella parapertussis and Legionella species is also performed. Difficult to identify Gram positive cocci reference isolates from around the state are submitted to us for identification. Traditional biochemicals and other tests, such as Lancefield grouping, are used to classify these organisms.

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The Parasitology lab conducts a sedimentation concentration procedure to recover intestinal parasites from humans. Specimens are received from local health departments, including refugee clinics. Microscopic examinations are conducted to determine and identify the presence of parasitic worms and amoeba. Some referral specimens are also received to confirm blood parasites.

The Mycology lab receives both clinical and reference samples from local health departments and other labs around the state. Specimens are cultured looking for mould and yeast pathogenic to humans. Identification is made from both macroscopic and microscopic morphology as well as through the use of certain selective media and stains.

Mycobacteriology, or the “TB Lab” as it is known, performs cultures on clinical specimens received from local health departments looking for Mycobacteria, specifically Mycobacterium tuberculosis, the causative agent of TB. Other Mycobacteria species are also identified. Susceptibility testing is performed to assist in the treatment of patients infected with this disease.

Scientific Services provides fresh media and reagents to all the laboratories throughout the NCSLPH. Ingredients and recipes are maintained to make each product, and most are sterilized using a steam autoclave. Discards, including decontamination of biohazardous waste, is handled by this work group for the whole of the NCSLPH.

Organisms of public health importance, once identified are reported to the N.C. Electronic Disease Surveillance System (NCEDSS) for the Epidemiology Section of DHHS. A selection of these is sent to the Center for Disease Control and Prevention (CDC) in participation with their National Antimicrobial Resistance Monitoring Program (NARMS).

For more information on services provided by the N.C. SLPH Microbiology Unit, please call 919-733-7367 or view information on the public website at http://slph.ncpublichealth.com/.

Cami Hartley, MLS (ASCP) CM
Medical Laboratory Supervisor
Microbiology Unit
Kudos and News: Summer 2012

Since the last Lab-Oratory was published, we have recognized two staff members as “Employee of the Quarter.”

- Congratulations to Gary Gittings, electronics technician in our maintenance shop, for being selected for service excellence in the first quarter. In selecting Gary, we acknowledge that it is often the behind the scenes people that make a difference in our daily work.

  Gary is always willing to help repair anything in the laboratory and no job is too large or too small for him to tackle! Some examples of repairs he has made include fixing a large coffee pot used for SLPH training workshops and repairing a lyophilizer used to prepare stock bacterial cultures for local health departments. Gary accomplished these repairs while explaining the problem in layman’s terms. Gary’s expertise has saved the SLPH significant money over time by repairing equipment no longer covered by a service agreement or using inexpensive parts from a local vendor. He always checks the instruments when his repairs are complete to ensure he has solved the problem.

  Gary accomplished these repairs while explaining the problem in layman’s terms. Gary’s expertise has saved the SLPH significant money over time by repairing equipment no longer covered by a service agreement or using inexpensive parts from a local vendor. He always checks the instruments when his repairs are complete to ensure he has solved the problem.

- Congratulations also to Second Quarter honoree, Candace Williams. Candace was recognized in the area of service excellence for being very knowledgeable about the NBS testing she performs to confirm cystic fibrosis (CF) using molecular testing. Candace clearly understands the impact of her results on the babies and their families and thus is dedicated to quality work. Not only does she deliver impeccable performance in the Hemoglobinopathy and CF laboratory, but also assists other NBS laboratories as needed. She is a great example of a team player. During periods of time with no laboratory supervisor, Candace performed many extra tasks to ensure the laboratory operations continued at a high level of quality. Her work is precise and accurate. She is honest, dedicated, respected by her peers and serves as a model employee.

- Recognition for honorable mention for second quarter was given to an employee from Environmental Sciences. Earl Hazelton was nominated in the category of service excellence, for outstanding organizational skills, knowledge of administrative processes, attention to detail and willingness to go above and beyond. Earl has taken on additional responsibilities during a long period of short staffing in Environmental Sciences and the quality of his work remains excellent. He strives to improve employee morale by planning activities that promote staff interactions in the Environmental Sciences Unit and for the entire laboratory. He also represents a true team player attitude. Special Kudos!

- Congratulations to Brenda Mickens in the Biotechnology and Emerging Pathogens Unit for completing her Master’s Degree in Public Administration in December 2011 through Strayer University. It was a two-year commitment that inspired her daughter to further her own education as well.

- Tiffany Perdue and Michaela Harvey-Creech, SLPH Laboratory Improvement Consultants, and La’Vonda Benbow, Consultant and Biotechnology Training Coordinator, successfully completed the N.C. Certified Trainers Course through the Office of State Personnel. The course covered methods of instructional design, training needs assessments, facilitation of discussions and evaluations of training events.

- Karen Wall, regional Laboratory Improvement Consultant for Area C, successfully completed the AACC Clinical Laboratory Leadership and Management Certificate Program. This is an online education program designed to develop skills in leadership, time management, motivation, laboratory personnel management, team development, and strategy associated with leadership and management within the clinical laboratory.

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**New Employees at the State Lab**
- Dr. Koon Lai: Newborn Screening
- Natasha Howell: Cytology
- Amber Best: Cytology
- Adrian Morrison: Virology
- Teleisha Mock: Newborn Screening
- Carter Holmes: Environmental Sciences
- Melanie Mohr: Bioterrorism and Emerging Pathogens

**Retiring / Separating**
- Mike King: Environmental Sciences
- Joy Hayes: Environmental Sciences
- Joan Mizelle: Newborn Screening
- Leslie Wolf: SLPH Director
- David Keller: SLPH Assistant Director

**Sad News**
- John Sheats, former SLPH Assistant Director who retired in 2003, passed away in May 2012. John served 30 years with the State Laboratory.
- Dr. Roger Lanier McDaniel, Jr. passed away in May 2012. He worked for over 20 years with the North Carolina Division of Public Health and the North Carolina Department of Agriculture.
Tech Talk:

What is PFGE?
If you recall our Winter 2011 edition of Lab-Oratory, pictured on page 7 was a State Laboratory employee holding a PulseStar Award. You may recall that her name is Denise Griffin. If not, below is the link to the full story: http://slph.ncpublichealth.com/Forms/Lab-oratory/Lab-OratoryWinterEdition.pdf

The article mentioned that Denise performs a procedure called pulsed-field gel electrophoresis (PFGE), which aids State Epidemiologists and CDC with foodborne disease investigation by performing DNA fingerprinting. If I was not a member of the State Laboratory Molecular Unit and a colleague of Denise Griffin, I would be lost as to how PFGE is done. When I was assigned the “TECH TALK” column for this edition, I thought why not use this opportunity to help everyone understand what goes on behind the scenes in the PFGE lab and how one could be nominated or receive the PulseStar Award.

History:
State Laboratory Director, Dr. Leslie Wolf brought PFGE to the State Lab in 1999. Shortly afterward, Denise Griffin joined the program. Today, the PFGE lab includes six CDC PulseNet certified technologists to perform PFGE, myself included.

Procedure with visual effects:
So, what is PFGE? To start off, the acronym stands for “pulsed-field gel electrophoresis”. It may sound easy, but in reality, it takes up to four days to get results ready to upload into CDC’s national database, or provide related information to our epidemiologists. You might ask how they produce these DNA fingerprints? Let me take you through the step-by-step process.

Organisms (Salmonella sp., shiga-toxin producing E. coli, and Listeria monocytogenes) are streaked on a media (sheep’s blood agar) plate and incubated overnight.

The organism is then suspended in a cell suspension buffer, and the turbidity is adjusted within a standardized range using a spectrophotometer (610nm wavelength).

The cell suspension is mixed with molten agarose (Jell-O like substance) and transferred into reusable molds to form small rectangular gelled pieces we call plugs.

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The plugs are then transferred into cell lysis buffer ("lyse" is a Greek word which means "to burst"), where they spend the next few hours being lysed, freeing the DNA from the bacteria cell. These plugs are then washed several times with water and then buffer. After being washed, the plugs are ready for digestion immediately or can be stored in a buffer for up to several years at 4°C.

Next, the plugs are digested with a restriction enzyme. Restriction enzymes cut the circular bacterial chromosome at specific sites, yielding several linear molecules of DNA, or DNA fragments.


Finally, these enzyme restricted plugs are embedded in agarose gel and run in an electrophoresis chamber using PFGE. The positively charged electrodes in the chamber pull the negatively charged DNA fragments through the agarose gel. Since the smaller DNA fragments can move faster through the gel, they are pulled closer to the bottom of the gel than the slower moving larger DNA fragments. You might be thinking, “Then why is it called pulsed-field?” The above mentioned procedure happens in conventional gel electrophoresis. However, in PFGE, unlike in conventional gel electrophoresis, the instrument alternates the electric current (or pulses) between opposing electrodes, so that the DNA travels in alternating directions through the agarose gel. PFGE allows for better separation and movement of much larger DNA fragments than traditional linear electrophoresis. The electrophoresis chambers run for 20-22 hours. Upon completion, the agarose gel is stained and photographed under UV light. The image (see above) is then analyzed to determine the unique banding pattern or DNA “fingerprint”, and then compared to other patterns to determine similarity.

Interpretation:
These fingerprints are analyzed using Applied Maths BioNumerics software. The basic principle is to compare isolates banding patterns and, if they are same strain, the sites at which the restriction enzymes act on the DNA and the length between these sites would be the same. If the patterns are the same after electrophoresis, then the isolates are considered identical or related.

These fingerprints are uploaded to the national database maintained by CDC. In order to upload patterns into the national database, the laboratory must strictly follow established standardized protocols, and individuals must be certified by CDC PulseNet. The rest is history.

Savitri Mullapudi
Molecular Diagnostics and Epidemiology Unit
(A special thank you to Shadia Rath for assisting with this article)
The North Carolina State Laboratory of Public Health has something to offer anyone who is looking for a rewarding career that ultimately serves all citizens of North Carolina. The State Laboratory is made up of various units focused on maintaining the well-being of the community. Currently, 200+ employees travel to the laboratory on a daily basis and work in Laboratory Improvement, Newborn Screening/Clinical Chemistry, Environmental Sciences, Cancer Cytology, Virology/Serology, Microbiology, Bioterrorism and Chemical Terrorism units. Those who work in the public health laboratory provide a level of knowledge and expertise that functions to safeguard the health of the public. For those with high school diplomas to those with doctorate degrees, there is a laboratory position available at the State Laboratory. Scientists, laboratory technologists and technicians, chemists and other specialists perform biological and environmental testing and provide those results to doctors, public health officials, epidemiologists and even law enforcement. Other laboratory staff members work to provide laboratory training, radiological testing and applied research, while still others provide the administrative, clerical and information technology backbone that helps the laboratory succeed. Public health laboratorians possess the skills and flexibility to contend with any concern that may face the community, whether it is an emerging infectious disease or an environmental issue such as an outbreak of salmonella. Employees of the laboratory are committed to keeping the environment safe and protecting the health of the public.

Providing guidance and leadership to the entire laboratory are the Laboratory Director and Assistant Director. The Director is responsible for overseeing all operations of the laboratory including staff management, budgets, and issuing policies and procedures to ensure compliance with local/state/federal regulations. The Director ultimately makes the decisions that will impact those who require the laboratory’s services. The Assistant Director provides administrative support to the Director, and all clinical and clerical sections of the laboratory. The Assistant Director is responsible for helping to ensure the technical competence of the laboratory staff. Together with the Director, they oversee all laboratory equipment and keep the laboratory current in new procedures and technologies. The Director and Assistant Director possess doctorate degrees as well as professional certifications.

A desire to help the community, a drive for excellence and a few other requirements are all that are needed to become a part of the State Laboratory clinical and environmental teams. Most positions in the laboratory require a four-year college degree in a physical science (biology, chemistry, microbiology) or medical technology. Some individuals hold professional certifications as medical technologists, clinical laboratory scientists, and/or medical laboratory scientists. Those positions include medical laboratory technologists, chemists and microbiologists. Individuals who fill these positions process samples, perform complex test analysis and report final test results, all while ensuring that proper protocols and quality control measures are followed. The positions often include supervisory duties. Those who work as laboratory technicians have usually completed a two-year Associates program and work to assist the medical laboratory technologists and the chemists. The laboratory technicians set up clinical tests, perform maintenance on laboratory instruments, monitor experiments and make decisions based on the data that is

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presented. Public health scientists possess doctorate degrees and are considered the technical experts in their respective areas of the laboratory. The public health scientists work to provide technical direction and act as leaders in research and technological advancement. Each technical employee touches the life of North Carolina citizens by providing reliable and accurate test results to aid in the detection and prevention of diseases, infections and outbreaks.

Other positions in the laboratory exist to ensure the safety and security of both employees and patients. The safety manager for the laboratory is responsible for the safety of all laboratory staff. This individual understands how to properly handle chemicals, waste and other laboratory hazards. The safety manager provides trainings, annual mandatory safety updates and seminars on new regulations related to laboratory safety. The quality assurance manager ensures that compliance with federal rules and regulations that are put into place to ensure accurate patient testing are followed. The quality assurance manager is extremely knowledgeable with regard to regulatory agencies and provides leadership to the laboratory during federal and/or state regulatory inspections. Often working closely with the safety manager and the quality assurance manager are the laboratory improvement consultants. These positions provide training and consultation to laboratory staff, health department staff, hospitals, clinics and other health care providers. The laboratory information technology (IT) team provides computer support, training and information system management to the entire laboratory. The team makes certain that computer-based patient information is securely maintained. The IT team works with laboratory instrument vendors to make certain that the devices properly interface with the laboratory information system. With each of these positions, the person has usually worked in the profession for several years and holds at least a four-year degree as well as professional certifications. The laboratory looks to these individuals to provide leadership and expertise throughout the laboratory.

Supporting units help to keep the laboratory running smoothly. Included are purchasing/accounting, mailroom, stockroom, maintenance and technical unit clerical support. To each of these areas, each person brings a sense of pride in knowing that what they do ultimately affects the newborn whose blood is being tested in the Newborn Screening Unit or the neighborhood’s water supply that is being tested for contaminants. High school diplomas and associate degrees are usually required to work in these areas.

It takes many people from many different disciplines to make the laboratory function. If you are interested in learning more about how the Public Health Laboratory serves the public, visit the following websites for more information:

Association of Public Health Laboratories: [www.aphl.org](http://www.aphl.org)


North Carolina State Laboratory of Public Health: [http://slph.state.nc.us/](http://slph.state.nc.us/)

La’Vonda Benbow, BS, MLT(ASCP)CM
Lab Improvement Consultant/Bioterrorism Training Coordinator
WNCPHA Annual Meeting:
“The Hills are Alive with Public Health”

On April 26th, laboratorians from Western North Carolina gathered for a great day of continuing education, networking, and FUN! Western North Carolina Public Health Association (WNCPHA) held their Annual Meeting at the Switzerland Inn in Little Switzerland. Just off the Blue Ridge Parkway, the views were breathtaking and provided a wonderful backdrop for the day’s events! The Laboratory Section had a full day of continuing education including Bioterrorism for Clinical Laboratories, 2012 Packaging and Shipping Recertification and Competency Assessment Challenges. With 25 participants, the attendance was the best we have seen in years! We ended the day discussing future WNCPHA meetings and electing officers. We are so thankful to those that volunteered to serve as officers. They are:

2012-2013 Laboratory Section Officers
Chair – Kristy Breedlove, NCSLPH
Vice-Chair – April Hill, NCSLPH
Secretary – Susan Holbrook, Cabarrus Health Alliance
Treasurer – La’Vonda Benbow, NCSLPH
Member-at-large – Teresa Hensley, Yancey County Health Dept.
Member-at-large – Joan McKinney, Mitchell County Health Dept.

Also, a special kudos goes to April Hill who also volunteered to be Vice-President of the main WNCPHA Executive Committee!

WNCPHA is a great association for Public Health employees to join. The annual dues are only $10 and are free for new members! The registration fees for the annual meetings are always very, very low as well. It is a great time to obtain continuing education hours and network with peers. I have made lifelong friends through WNCPHA, and it’s always a joy to see old friends (and new) each year! In addition to WNCPHA, there is also a Laboratory Section in NCPHA. They will hold their annual meeting in September in New Bern – so Eastern North Carolina, don’t feel left out! Please go to www.ncpha.com for more information.

If you are interested in joining or would like more information, please go to www.wncpha.com.
You can also contact Kristy Breedlove at kristy.breedlove@dhhs.nc.gov or (919) 733-7186.

Kristy Breedlove, BS
Laboratory Improvement Consultant
North Carolina State Laboratory of Public Health
The Safety Corner
Opportunities for a Safer Workplace:
Biohazard Warning Signs

Biohazard Warning Signs are the next topic on our ‘Top 10’ list. While most laboratories have at least some biohazard signage, the term – less is more – does NOT apply here. Biohazard symbols should be seen all over the laboratory. All entrances to the lab should be labeled with a biohazard symbol. OSHA’s Bloodborne Pathogen Standard specifically states this.

1910.1030(e)(2)(ii)(D): When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors.

In addition to the entrances, biohazard labels should be placed on all contaminated equipment. OSHA also addresses this in the Bloodborne Pathogen Standard.

1910.1030(g)(1)(i)(A): Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials.

Keep in mind, these labels must be fluorescent orange or orange-red, with lettering and symbols in a contrasting color. Red bags or red containers may be substituted for labels.

If you have any questions regarding safety, please contact Kristy Breedlove at kristy.breedlove@dhhs.nc.gov or (919) 733-7186. Look for the next installment of The Safety Corner when we will continue with the series: “Laboratory Safety’s “Top 10” List: Opportunities for a Safer Workplace!”

Kristy Breedlove, BS
Laboratory Improvement Consultant
NCSLPH

References:
OSHA Bloodborne Pathogen Standard, Accessed 6-12-12.