

**New Mexico Department of Health  
Scientific Laboratory Division News  
Fall/Winter 2008**



**INAUGURAL LABORATORY NEWSLETTER**

**From the Director**  
**David Mills, Ph.D., HCLD**  
**SLD Director**

I would like to take this opportunity to introduce you to the inaugural edition of the Scientific Laboratory Division newsletter! Last Spring, the NM Department of Health, Scientific Laboratory Division (SLD, as you all know it) held a full day meeting with its partners and clients to conduct assessment of the New Mexico Public Health Laboratory System. The system, to those not familiar with it, consists of the SLD and all of the statewide partner agencies and clients with whom SLD interacts.

While the assessment produced a number of observations and recommendations that have been distributed to participants, I was struck by two observations in particular. The first was that most participants - even those who have worked quite closely with SLD for many years - had no comprehension of the astonishing breadth of activities and responsibilities of SLD across agencies and across the state. Most were only familiar with the single program through which they interact with SLD. The second thing that struck me was that many participants have questions about how their own agencies work within the government system and often look to SLD for solutions in areas where SLD has no authority or jurisdiction. One of the recommendations

that came out of the assessment was that SLD should strive to improve communication with its partners throughout the state and that this would help to strengthen the entire system.

As a result, SLD is initiating this external newsletter, which will be published three times yearly- Spring, Summer and Fall/Winter. In this newsletter, we will provide informative articles about developments within both SLD and with the state and federal regulations that affect SLD and its work for its partners and clients. We will also provide reviews and updates on topics relevant to our partners and the programs that they operate with SLD support.

For this first issue, we thought that the best place to start would be "at the beginning". Please read on for an introduction to the bureaus, offices, and programs with the 134 staff members that are the Scientific Laboratory Division. We hope you find it informative and enjoyable, and we welcome comments and suggestions for content and distribution!



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**SLD Mission**

The mission of the Scientific Laboratory Division is to provide analytical laboratory services and scientific advisement services for tax-supported agencies and groups or entities administering health and environmental programs for New Mexico citizens.

**Biological Sciences Bureau**  
**Debra Horensky, M.D.**  
**Bureau Chief**

The Biological Sciences Bureau at SLD is organized into four laboratory sections: General Microbiology/Tuberculosis/Fungal, Virology/Serology, Environmental Microbiology and Molecular Biology. The Bureau performs diagnostic and reference testing for the 50 public health clinics, the hospitals within NM, the city and state Environment Departments, the Department of Agriculture's Dairy Program and Veterinary Diagnostic Services, and the Office of the Medical Investigator. It is also New Mexico's Laboratory Response Network Laboratory, partnering with the Centers for Disease Control and Prevention for response to emerging infectious diseases and bioterrorism incidents. In a year, the Bureau performs approximately 156,000 tests on nearly 100,000 specimens.

The Virology/Serology Section performs primary public health diagnostic clinic testing for syphilis, hepatitis and HIV, and influenza viral culture testing. They are the state confirmatory laboratory for influenza. Influenza surveillance continues throughout the year and any positive results are forwarded to the Centers for Disease Control for the national and worldwide flu surveillance program. The General Microbiology Section serves as the microbiological reference laboratory for the 40 hospitals within New Mexico for "difficult to identify" microorganisms. Tuberculosis, fungal and general microbiological work-ups for either humans or animals are done on a routine basis. We've had some very interesting clients, including Irene the elephant from our local zoo! Our Bureau also performs the microbiological and serological testing on autopsy cases from the

Office of the Medical Investigator to assist with determination of cause of death.

The Environmental Microbiology Section performs milk, water and food testing for New Mexico and is New Mexico's primacy laboratory for dairy testing. Milk and drinking water are routinely tested many times throughout the year to ensure that they are not microbiologically contaminated with coliform organisms. Coliform organisms are indicators that contamination has occurred at some point prior to market. Any suspect tainted food brought in through the city or state environmental agencies is also tested to rule out microbiological contamination. The section also serves as a confirmatory testing lab for any presumptive milk thought



to contain antibiotics left over from treatment of a sick animal.

We provide outbreak response for rabies, plague, tularemia and food-borne illness. Our staff works closely with the Department of Health's Epidemiology and Response Division so that laboratory diagnostic results can quickly translate into a clinical or population medical intervention or public service announcements when necessary. Biological Sciences Bureau was instrumental nationally in making the link between the spinach outbreak in 2007 and the New Mexico patients becoming ill from eating the tainted spinach. Biological Sciences Bureau could be working on more than 50 possible food outbreaks within one year as we provide this continual routine

surveillance for our state partners!

Our Molecular Biology Section response team tests alleged biological terrorism specimens, from white powders in envelopes brought to us by the FBI or State Police to suspicious microorganisms detected by other clinical labs in the state. Our on-call team ensures that questionable samples that have had a 'positive' presumptive field screen are either confirmed or disproven, allowing FBI, postal service, and local enforcement to quickly implement or deactivate their response plans based on the outcome of our tests.

In our role as the emerging infectious disease surveillance laboratory for New Mexico, we also conduct surveillance for West Nile virus, testing mosquito pools across the state to identify where spraying programs and public advisory notices are needed. In working with our state colleagues, notification can then be sent out to the public to remind individuals of the proper necessary precautions to prevent infection and disease from mosquitoes.

The Biological Services Bureau laboratories hold certifications for Clinical Laboratory Improvement Amendment (CLIA-for human specimen diagnostic testing), Food and Drug Administration (FDA-for milk and food testing), and Environmental Protection Agency (EPA-for water testing). The American Association of Veterinary Laboratory Diagnosticians (AAVLD) certification will be added for the veterinary testing in the spring of 2009.

With all of this going on, our biological sciences technologists keep very busy serving the state to ensure that human and animal disease surveillance continues, that NM milk and water are safe to drink, and in general, to serve as the public health diagnostic lab for communicable disease detection.

**Chemistry Bureau**  
**Phillip Adams, Ph.D.**  
**Bureau Chief**

The Chemistry Bureau at the Scientific Laboratory Division (SLD) consists of five sections: Air and Heavy Metals (AHM), Organic Chemistry (OR), Radiochemistry (RC), Water Chemistry (WC) and Chemical Terrorism Analytical Response (CTAR). Each section is headed by a Staff Manager, and the larger sections have one or two Line Supervisors. When fully staffed, the Chemistry Bureau has 36 FTEs, including the Bureau Chief. Please refer to the SLD web-page at [www.sld.state.nm.us](http://www.sld.state.nm.us) for more information regarding specific testing capabilities.



The Chemistry Bureau receives a variety of environmental samples from municipalities, Indian tribal areas and the federal government (national parks and forests), but the New Mexico Environment Department (NMED) is the primary client of the Chemistry Bureau. NMED samples include fee-for-service work for the Drinking Water Bureau and general fund work for other NMED bureaus, including Surface and Ground Water, Air Quality, Radiation Control, Solid Waste, and Liquid Waste.

Apart from the CTAR Section, the sections of the Chemistry Bureau are involved almost entirely in environmental sample analysis. Most of these samples are water –



from the ground, from rivers, or drinking water from public water supply systems. The AHM Section measures air particulates, and analyze for mercury in samples as diverse as fish tissue, urine and hair. The Organics Section also analyzes for volatile organic chemicals in air samples. The Radiochemistry and Water Chemistry Sections analyze for radiological contaminants or agricultural by-products in soils, as well as the regulated contaminants in water. Some of the sections also participate in research projects with our partners, *e.g.* biomonitoring for metals and phthalates and determining pharmaceutical residues in the surface and ground waters of New Mexico. Sampling, analysis, quality control, data handling and reporting of these samples are carried out in accordance with the US Environmental Protection Agency (EPA) regulations. The SLD is the EPA Primacy Laboratory for New Mexico, and is certified by the EPA under the Safe Drinking Water Act for regulated chemical and radiological contaminants. The environmental microbiological contaminants for drinking water are tested separately, in the Biological Sciences Bureau.

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The CTAR Section's only federal client is the Centers for Disease Control and Prevention (CDC), for whom it runs clinical proficiency samples, and maintains equipment ready for any emergency related to chemical test methods. The CTAR Section is one of the five original Level 1 Laboratory Response Network (LRN) chemical testing laboratories in the country. There are currently ten such labs overall. In addition, this section has analyzed urine samples obtained through the six-state, CDC-funded Rocky Mountain Biomonitoring Consortium, as well as water and urine samples for biomonitoring projects within New Mexico. CTAR samples are primarily clinical rather than environmental, and use LRN testing protocols rather than EPA or Standard Methods.

The Chemistry Bureau performs approximately 30,000 tests on nearly 20,000 samples, generating over 200,000 individual test results on the various samples and specimens. Most of this data will be used to populate federal databases in support of the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act.



**Toxicology Bureau**  
**Rong Jen Hwang, Ph.D.**  
**Bureau Chief**

The Toxicology Bureau is divided into three scientific sections: Breath Alcohol, Drug Screening and Drug Confirmation. These three sections provide support services for law enforcement agencies throughout New Mexico and for the New Mexico Office of the Medical Investigator. Law enforcement agencies use this Bureau's reports to determine if individuals were impaired with either alcohol or drugs while driving. The Office of the Medical Investigator uses toxicology reports to determine the cause of an individual's death.

Each year, the Bureau receives approximately 2,500 cases from the law enforcement agencies across the state for investigation of impaired driving from alcohol or drugs. The Bureau also receives an equal number of cases from the Office of the Medical Investigator for alcohol and/or drug testing. The Bureau is accredited by the American Board of Forensic Toxicology, and has 22 full-time employees and one part time instructor.

The Breath Alcohol Section provides training and certification for law enforcement as breath alcohol testing operators (3,000) and key operators (300). The section also maintains and certifies the 200 plus breath alcohol testing instruments called the Intoxilyzer 8000s which are in use throughout the state. The section prepares the solutions used to check calibrations as well as unknown solutions (proficiencies) as part of a quality assurance program for breath alcohol operators. The Breath Alcohol Section is in charge of preparing training materials and

teaching law enforcement officers on the use of these instruments. The officers are required to take the class every two years and pass a test for certification as an operator. Certain officers are also required to take a more extensive class and pass certification as a key operator. In addition to maintaining instruments in the field, key operators must pass quarterly proficiency testing provided by the Bureau to maintain their certifications.



The Drug Screening Section, formed this past summer, serves both law enforcement and the New Mexico Office of the Medical Investigator. The section receives blood samples from law enforcement agencies to test for alcohol and drugs associated with arrests for impaired driving. These samples are analyzed for alcohol concentration. If the alcohol level is not equal to or above the legal limit (0.08 mg%), these samples will be tested further for the presence of drugs. Specimens screening positive for the presence of drugs will then be turned over to the Drug Confirmation Section for confirmatory testing and reporting out. The Drug Screening Section staff also handles all of the testing activity, such as body fluid or tissue alcohol, carbon monoxide and drug screening for the Office of the Medical Investigator.

The Drug Confirmation Section receives human fluid or tissue samples from DWI and autopsy

cases. Common body fluids are blood, vitreous humor from the eyes and urine. Common tissues are liver, brain and muscle. Several types of samples can be received for any case. These samples could be either antemortem (before death) or postmortem (after death). The Drug Confirmation Section then tests each sample, including ones from law enforcement agencies, to confirm illegal, prescribed and over-the-counter drugs and quantifies them as necessary. The entire process from specimen receipt to test completion could take eight weeks or longer depending on complexity of the drug cases and number of drugs present. At the present time, the Toxicology Bureau reports out approximately 88% to 90% of its cases within eight weeks, and 99% within twelve weeks.

All specimens handled by the Bureau are received and processed through a chain of custody to assure that they were not tampered with. Analysts and supervisors in this Bureau and the Bureau Chief are frequently subpoenaed and often travel throughout the state defending the laboratory results in courts of law. In 2007, over 1,200 subpoenas were received by the Bureau, a 47% increase from the previous year! This reflects the state's determination to prevent driving a vehicle under the influence of alcohol and/or drugs.



## **Program Support Bureau Rocky Baros, Bureau Chief**

The Program Support Bureau is comprised of five sections: Fiscal, Purchasing, Specimen Receiving, Engineering and Physical Plant. In short, the Program Support Bureau is responsible for the non-analytical functions of the laboratory.

The Fiscal Section prepares, manages and monitors the budget. This section makes all payments for goods and services for the Division. All payments must be made in accordance with the Department of Finance & Administration, DOH and statutory requirements. In addition to making payments, Fiscal also prepares all billings for laboratory work done for our clients.

The Purchasing Section is responsible for the procurement of all goods and services for the Division. All purchases must be made in accordance with State purchasing rules and regulations. It is the job of this section to ensure that we procure the right quality, in the right quantity, at the right time, at the right price, from the right supplier and in a manner that serves the Division. This section has occasionally served as a resource for other agencies in the purchases of laboratory supplies. It is the Purchasing Section that navigates the government bureaucracy to ensure that the scientists always have the equipment and reagents they need on hand to perform their duties.

The Engineering Section is responsible for maintenance and repair of the laboratory's scientific equipment. While this is only a section of one employee, it is extremely vital to the overall operation of the Division, saving SLD a great deal of money and "down time" by offering in-house repairs of instruments whenever possible.

The Physical Plant Section maintains support service for the building, including OMI and VDS. This section oversees all contractors such as electricians, plumbers, and other technicians. Given the complexity of air handling and waste handling systems in the facility, including high containment Biosafety Level-3 laboratories and infectious disease wastes from both animals and humans, this is a particularly sophisticated task.

## **Office of Quality, Safety, Security and Emergency Preparedness Gary Oty, Office Director**

The Office of Quality, Safety, Security, and Emergency Preparedness, (QSSEP) has many responsibilities as evidenced by its long name.

Quality initiatives that fall within QSSEP are both internal and external in nature. Internal to SLD, a number of Quality System components are in place to ensure that compliance with regulatory entities is maintained. Separate sets of regulations and external certification programs exist for each of the analytical Bureaus within SLD, and QSSEP works to assist the Bureaus in maintaining compliance as well as preparing for and responding to audits. QSSEP also ensures that standard operating procedures are revised and approved appropriately, that employee training meets requirements, that any needed corrective actions are documented and completed, and that proficiency testing is performed and recorded. Internal audits of SLD analytical sections help to ensure that Quality Assurance activities are appropriately performed and documented. QSSEP personnel also perform audits of external laboratories to verify their compliance with regulations in place for performing analyses under the EPA's Safe Drinking Water Act and the FDA's

Pasteurized Milk Ordinance.

SLD's safety programs also reside within QSSEP. SLD's Safety Officer chairs a lab-wide Safety Committee that performs internal safety inspections, investigates accident reports, and remediates any unsafe conditions found in the building. Laboratory staff are trained in first aid, CPR and the use of fire extinguishers. Routine drills are conducted to ensure that the building can be evacuated safely and completely in an emergency event.

Security at SLD is a major concern due to the sensitive nature of results from the various analyses performed, the presence of dangerous chemical and biological agents, and the value of the equipment maintained in the laboratory. SLD's Security Officer monitors the various security systems in place throughout the building. All security issues are investigated and remediated in a timely fashion.

Various emergency preparedness activities have their home in QSSEP as well. SLD's Emergency Manager oversees the lab's Emergency Response Team (ERT), a group of employees who train and practice response skills to be able to respond to a biological release, chemical spill, security incident, or other emergency. QSSEP personnel are also involved with SLD continuity of operations planning and maintain SLD's emergency communications capabilities. Externally, QSSEP personnel train clinical laboratories around the state in the identification and referral to SLD of potential bioterrorism agents, and train hazardous materials teams to properly test and deliver potential chemical terrorism or other all-hazards materials to SLD.

Providing various required trainings, revising and distributing SLD operational plans, helping maintain SLD's Select Agents and Toxins registration, and other duties "as assigned" round out the work of QSSEP staff.

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