



# DELAWARE LABORATOR



Winter/Spring

2011

## GOVERNOR MARKELL ANNOUNCES NEW DRINKING WATER INITIATIVES

**DEBBIE RUTLEDGE, MBA,  
INFECTIOUS DISEASES LABORATORY MANAGER II**



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On Thursday, March 03, 2011, Governor Jack Markell held a press conference at the Delaware Public Health Laboratory centered around two new initiatives to better inform the public on the quality of their drinking water. These initiatives are a direct result of the focus on drinking water safety that Governor Markell began last year.

The Governor proposed a requirement to test individual private wells for contaminants when wells are first drilled or when homes with private wells are sold. The other initiative was to unveil the state’s new water quality website, [waterquality.delaware.gov](http://waterquality.delaware.gov), which will provide information on the drinking water quality of every public water system in the state.

The proposal to test private wells comes from a joint recommendation from Delaware Health and Social Services (DHSS) and the Department of Natural Resources and Environmental Control (DNREC), which concluded that more should be done to protect and inform users of individual drinking water wells. DNREC, which regulates well drilling, will propose a regulation requiring a water quality test when new private drinking water wells are drilled or when a home with a private well is sold. Most public drinking water is routinely tested by cities or towns but those that have private well water do not have that assurance.

DNREC will propose a phased approach with some of the requirements becoming effective before others. These requirements will eventually include testing for bacteria and certain chemicals as well as volatile organic compounds,

many of which can be carcinogens. Samples will be analyzed by private labs certified by DHSS. The proposed regulation would not affect non-potable private wells, such as those used for irrigation.

Secretary of Health and Social Services, Rita Landgraf said the new requirement will put Delaware in step with surrounding states and counties when it comes to protecting the health of those with private wells. Some mortgage companies in Delaware already require private well tests, she said. “Although well water may taste, smell and look fine, the only way to know for sure that water is safe to drink is to test it. By discovering contaminants early, Delaware families on private wells may avoid immediate and possible long-term health risks,” Secretary Landgraf said. “We should give private well owners the same protection that Delawareans drinking public water have.”

Director of Public Health, Karyl Rattay, MD, MS, FAAP, FACPM, welcomed everyone to the laboratory and expressed how vital water is to everyone’s health. She also mentioned the importance of having safe and clean drinking water and that State of Delaware employees are encouraged to participate in *DelaWELL*, where they are challenged to drink at least 5 glasses of water each day and to promote healthy habits.

The proposed testing requirements drew support from the Delaware Cancer Consortium. “Better understanding our exposure to harmful chemicals is the first step in reducing our risk,” said Meg Maley,

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### Special Points of Interest:

#### Front Page Article :

**Governor Markell Announces New Drinking Water Initiatives**



**Newborn Screening in Delaware—2011 View**

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Chair of the Consortium's Environment Committee. "I applaud Governor Markell for his continued commitment to making our environment safer and assuring that we have the information we need to lead healthier lives."

"Protecting and improving water quality is among the most important responsibilities of the state," said DNREC Secretary Collin O'Mara. "This is both a consumer and environmental protection initiative. Whether served by a public system, a public well or private well, Delawareans have a right to know about the quality of their drinking water. The testing will provide DNREC and DHSS with groundwater data that will help our agencies prioritize areas for further investigation and remediation." After discussions with stakeholders, DNREC plans to present the specific proposed regulatory changes in workshops in the spring, and then formally accept comments on the changes through a public hearing process.

The new website, [waterquality.delaware.gov](http://waterquality.delaware.gov), was launched by DHSS and DNREC in September and is a compilation of state resources about water along with a new easy-to-use map providing instant access to the annual water quality report for each public water system. Drinking Water Watch, now listed on the water quality site, dramatically expands the information available about these systems, including detailed testing results, dates of site visits by inspectors, and history of any violations, all updated as tests occur and are reported to DHSS's Division of Public Health.

Governor Markell, DNREC Secretary Collin O'Mara and DHSS Cabinet Secretary Rita Landgraf



Governor Markell talks with Charity Mabrey, Microbiologist II in the laboratory's water bacteriology lab.



Governor Markell and DNREC Secretary O'Mara talk with Anthony Tata, Analytical Chemist III, and Christina Pleasanton, MS, DPH Laboratory Acting Director, in the environmental chemistry section.

## ***DRINKING WATER LABORATORY CERTIFICATION AS IT RELATES TO PUBLIC HEALTH***

***MARY ANN LUSTFIELD, LAB MANAGER I***

The Delaware Public Health Laboratory's job is to ensure safe drinking water for the State of Delaware. The laboratory analyzes drinking water under the auspices of the US Environmental Protection Agency's (EPA) Safe Drinking Water Act and its amendments. The DPH laboratory, which is certified by the EPA, performs approximately 95,000 tests on approximately 15,000 samples annually from the public and private drinking water supply. Drinking water analysis at the DPHL includes inorganics: nitrate, nitrite, fluoride, sulfate, chloride, iron, calcium hardness, sodium, alkalinity, cyanide, total dissolved solids; volatile organic compounds: trichloroethene, tetrachloroethene, vinyl chloride; trace metals: antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, thallium, uranium 238, zinc; and microbiological: total coliform, fecal coliform. During 2010, the lab processed samples and performed testing as follows: public and private chemical testing — 4,442 samples, 74,350 tests; public and private microbiological testing — 10,169 samples, 20,338 tests.

Drinking water laboratories must be certified by the EPA or the state to analyze drinking water samples for compliance monitoring. Certified laboratories must successfully analyze proficiency testing samples annually, use approved

methods, and successfully pass periodic on-site audits. The state should also provide technical assistance to laboratories. In Delaware there are three laboratories which are certified for chemical testing in drinking water and three laboratories which are certified for microbiological testing in drinking water. There is one laboratory that is certified for asbestos testing in drinking water. Go to [www.dhss.delaware.gov/dhss/dph/hsp/dwlabcert.html](http://www.dhss.delaware.gov/dhss/dph/hsp/dwlabcert.html) for the list of these laboratories. The state may also choose to certify laboratories outside their state either by an on-site evaluation or reciprocity.

The most recent public health drinking water issue concerns hexavalent chromium. The trivalent form of chromium is considered an essential nutrient; however, the National Toxicology Program considers the hexavalent form of chromium carcinogenic. Chromium (total) is a primary regulated contaminant which has a maximum contaminant level (MCL) of 0.1 mg/L. The DPH laboratory's reporting level for total chromium is 0.5 µg/L, which is considerably above levels that are thought to be harmful. We are therefore looking into the feasibility of the ion chromatography method for analysis of hexavalent chromium.

The website <http://www.water.epa.gov/action/advisories> offers information on protection from water-related health risks such as microbes in tap water and in water used for swimming, and contaminants in fish and shellfish.



Websites of interest:

<http://water.epa.gov/drink/local/>  
**Local Drinking Water Information:**  
Selected information available from the U.S. EPA Office of Water about each state.

[http://water.epa.gov/lawsregs/guidance/sdwa/upload/2009\\_08\\_28\\_sdwa\\_fs\\_30ann\\_publicinvolve\\_web.pdf](http://water.epa.gov/lawsregs/guidance/sdwa/upload/2009_08_28_sdwa_fs_30ann_publicinvolve_web.pdf): **Public Access to Information & Public Involvement**

<http://water.epa.gov/action/protect/index.cfm>: **Protect Your Drinking Water for Life**

**Information for this article was excerpted from the following sources:**  
Manual for the Certification of Laboratories Analyzing Drinking Water, Fifth Edition PDF, EPA 815-R-05-004, January 2005

EPA website- <http://water.epa.gov/>



[www.dhss.delaware.gov/dhss/dph/lab/labs.html](http://www.dhss.delaware.gov/dhss/dph/lab/labs.html)

**NEW!!**

- *DPHL Policy re: Norovirus Testing*
- *Updated Specimen collection Procedures*
- *Visit the Laboratory System Working Group page*
- *More!!*

## NEWBORN SCREENING IN DELAWARE – 2011 VIEW

PATRICIA M. SCOTT, LABORATORY MANAGER I

The Newborn Screening (NBS) testing program at Delaware's Public Health Laboratory (DPHL) is now in its 12<sup>th</sup> year. Comparing ourselves to June 30, 1999, the day when the first specimens came through our door and a staff of four performed six tests for four disorders, very few things have remained the same. Today, the Delaware NBS program is collecting information for 38 disorders, working to ensure the continuity of testing, integrating molecular analysis into our testing protocols, and preparing for a future that will include adding SCID (Severe Combined Immunodeficiency) to our list of disorders in 2011, making it the 39<sup>th</sup> disorder screened for in Delaware.

### SECOND MS/MS

Thirty one of the disorders we screen for are detected via MS/MS technology, two mass spectrometers combined in tandem in one instrument. Since we began using this technology in January 2003, the continuity of testing has always been a concern because we had only one instrument available for testing. We had to rely on a reference laboratory to perform the testing if the MS/MS was down for more than three days. We currently have an agreement with PerkinElmer Genetics (PG) to be our reference laboratory and to pick up our complete workload in the event of a disaster. NYMAC, the New York, Mid-Atlantic Consortium, is also fully involved in ensuring the continuity of operations within the region. Now, we are very happy to announce that we are the proud owners of a second MS/MS analyzer, the Waters Acquity UPLC and TQD tandem mass spectrometer/detector. Although the instrument is not yet ready for full-time operation, with training and validation studies progressing as this article goes to print, we are very pleased with the capabilities that will be available with this new, faster, more sensitive instrument.

### CYSTIC FIBROSIS DNA TESTING

DPHL began testing for Cystic fibrosis (CF) in October 2006 using an IRT/IRT algorithm (Immunoreactive trypsinogen on the initial specimen and if it was in the high 97% of the population tested, IRT was repeated on the second specimen). We are now drawing to completion a pilot study for CF-DNA testing, a second tier molecular test that will be added to our test profile, increasing sensitivity, reducing false positives, minimizing the need for sweat testing, and changing our CF algorithm to IRT/IRT/DNA.



This CF-DNA testing is possible due to a two-year grant from the Centers for Disease Control & Prevention (CDC) awarded to DPHL for the purpose of enhancing the capacity of CF-DNA testing within our region by providing free CF-DNA testing for other states through the end of the grant period, September 30, 2011. The first year of the grant was dedicated to identifying appropriate space within the laboratory for additional molecular testing, hiring qualified scientists, and choosing and validating a method. So far, the second year of the grant has involved pilot testing in Delaware, preparing our Natus data system to electronically merge the data from the Hologic software (eliminating manual entry), and offering this CF-DNA testing to other states. Virginia is on track to send us specimens while they organize their own effort to bring up CF-DNA testing. If your state is interested, please contact Pat Scott, NBS Laboratory Manager @ 302-223-1520.

The CF-DNA grant project led to a second cooperative project with CDC that was designed to definitively identify the analytical sensitivity of the Hologic ASR method for each of the 40 mutations included in the method. CDC provided the true case samples and assisted in obtaining accurate measurements of the amount of DNA in the extractions. Hologic supplied the extra kits, and DPHL performed the testing.

### SEVERE COMBINED IMMUNODEFICIENCY TESTING IN OUR FUTURE

We are excited to add SCID (Severe Combined Immunodeficiency) testing to our list of disorders this year. In May of 2010, Kathleen Sebelius, Secretary of the US Department of Health and Human Services, recommended that states adopt the American College of Medical Genetics National Uniform Screening panel and add SCID to their testing panel, as recommended by the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children. In October 2010, the Delaware Newborn Screening Advisory Committee addressed the issue in a session dedicated to SCID and made a unanimous recommendation to add the disorder to the newborn screening panel.

SCID is a group of disorders characterized by the inability to produce T-cell lymphocytes and subsequent deficiency of the immune system. Infants affected by SCID develop recurrent infections leading to death in early childhood. SCID affects a minimum of one in 100,000 newborns; however, some studies estimate that the actual number is closer to one in 40,000. Treatment in the first months after birth can prolong life and prevent infections. Since early detection can lead to effective interventions and even cure some cases, the Division of Public Health fully supports making this testing avail-

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*Newborn Screening in Delaware, continued*

able to Delaware newborns. This year is on track to be an exciting and milestone year for us. Molecular technology, specifically the addition of CF-DNA regional analysis and SCID testing, makes the view from Delaware very promising. The State of Delaware is proud to be on the forefront of the movement to add SCID testing to the state NBS panel. We are proud of the team effort that has brought us to this point and the team effort that will propel us through the coming years.

## INTERN REPORT



Hi, my name is Sabrina Youngblood and I am a senior at Delaware State University. I will graduate in May 2011 with a Bachelors Degree in Public and Community Health. I chose to complete my internship at the Delaware Public Health Laboratory, where I could observe various testing methods and learn more about the programs being implemented by the Division of Public Health.

A major part of my internship was spent in the microbiology lab, learning the procedures for receiving and making batches for testing of chlamydia and gonorrhea. I was also given a project, calibrating pipettes for accuracy. I spent time in other areas of the laboratory including virology, newborn screening, environmental and molecular microbiology, chemistry, and the warehouse. I also went on a courier run, picking up samples from hospitals and state clinics. Some of the procedures that I observed included: Real Time PCR, PFGE, HIV and syphilis testing as well as newborn screening for various disorders.

I was also given the wonderful opportunity to visit other departments of the Division of Public Health such as the Office of Drinking Water where we collected water samples, Community and Environmental Health systems where we conducted health inspections, and the Bureau of Epidemiology where we completed a report on food outbreaks. I spent time with HIV/AIDS surveillance programs and visited two of the state service centers in this area.

This has been such an exciting experience for me, and I truly appreciate Debbie Rutledge and Linda Popels for all of their hard work coordinating and allowing me to shadow their employees through these twelve weeks. I will never forget this, and I had a wonderful time being here. If there is anything that I've learned while being here, it is that usually everything ends up at the state lab!

**Come join us!**  
**Tours!! Fun!!**  
**April 20, 2011**  
**9:00 am - 4:00 pm**  
**Delaware Public Health Laboratory**  
**Open House**

**Special Guest Speakers:**  
**Rita M. Landgraf, DHSS Cabinet Secretary;**  
**Dr. Karyl Rattay, Director of Public Health**  
**Public Health Partner Displays**

# EMPLOYEE NEWS



**Jianlin Wang** joined the environmental chemistry section as an analytical chemist III in November 2010. Jianlin graduated from the Chinese Academy of Sciences in Nanjing, China with a Master degree in sciences. His previous employment was with Wildlife International Inc. in Easton, MD.

Welcome Jianlin!

The lab welcomes **Iris A. Fontaine-Glover** to the microbiology and virology sections as a microbiologist II. Iris is a 1993 graduate of the University of Pittsburgh with a major in biology and a minor in chemistry and anthropology. She previously worked with the Pennsylvania Department of Health, Department of Virology. Iris is married to Michael Glover with two children, Makenna and Marcus.



**Sabrina Youngblood** joined the DPH lab as a student intern for the spring semester. Sabrina will graduate in May from Delaware State University with a double major in Community Health and Social Work. As part of a class project, she helped develop a program called Better Life Choices to decrease violence in Capitol Park in Dover. Her team's project was chosen to be implemented and will focus on bullying

and violence prevention. See Sabrina's Intern Report on page 5. We are happy to have her at the lab!

**Donna Colatrella** MLT (ASCP) has been promoted to the microbiologist III position in the clinical microbiology laboratory at DPHL. She has been at DPHL for 13 years in positions including courier driver and lab tech in the microbiology and newborn screening sections. Donna has an Associate's Degree in Applied Science with a major in Laboratory Medical Technology. In her spare time, Donna likes to read, travel and shop. We are excited to have her in her new position where she will continue to be a great asset for the section.



## DELAWARE'S DIVISION OF PUBLIC HEALTH LABORATORY



Delaware Public Health Laboratory  
30 Sunnyside Road  
Smyrna, DE 19977  
302.223.1520  
Fax: 302.653.2877

**Built: 1990**

**Business Hours: 8 a.m. – 4:30 p.m.**

**Purpose:** The Division of Public Health Laboratory currently offers consultation and laboratory services to state agencies, Delaware Health and Social Services and Division of Public Health programs including:

- HIV surveillance and prevention
- Immunization
- Lead
- Epidemiology
- Newborn Screening
- STD prevention
- TB Elimination
- Drinking water
- Preparedness



Karyl Rattay, MD, MS, FAAP, FACPM,  
Director, Delaware's Division of Public Health

Christina Pleasanton, MS  
Acting Director, Delaware Public Health Laboratory

If you have questions regarding these articles or would like to receive a hard copy of this newsletter, contact the Delaware Public Health Laboratory at 302.223.1520. To receive this newsletter by email, contact Liz Moore, Editor, at [liz.moore@state.de.us](mailto:liz.moore@state.de.us).

*"To Protect and Enhance the Health of the People of Delaware"*

