State Hygienic Laboratory
at The University of Iowa

The Next Era

Annual Report
Fiscal Year 2010

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Dear Friends,

The year 2010 was highlighted with many accomplishments by the State Hygienic Laboratory at the University of Iowa. Most notably, we dedicated our new laboratory on the Research Park campus in Coralville. This state-of-the-art facility will not only allow the Hygienic Laboratory to continue its nationally recognized contributions to the quality of life Iowans expect, but also expand our support of scientific advancements and workforce development.

In 2010, we continued our leadership role. Of course, our success is the result of our staff. Our scientists again were the first to confirm the presence of *Salmonella* in a nationwide outbreak, which helped diminish the spread of illness and suffering. Work such as this provides researchers, clinicians and legislators with a snapshot of the state of health challenges within our borders.

In 2010, we greatly expanded our internship program, which provides college-age students an opportunity to put their knowledge to work at the state lab. This past year, we hosted interns from 13 colleges and universities, a new record for our staff.

2010 will be remembered as a year of transition for the Laboratory. The challenges we overcame and the accomplishments we achieved will serve us well as we prepare to face the next threat to the health of Iowans. Thank you to all who have brought us to this point and to those who will contribute to the next era of the State Hygienic Laboratory.

Christopher G. Atchison, Director

Ceremonies mark 'the beginning of something great'

A day many years in the making arrived on May 5, 2010, on the University of Iowa Research Park campus in Coralville. With the ceremonial cutting of a yellow ribbon, a 82,000 square-foot architectural gem officially became the new home of the State Hygienic Laboratory.

"This is a lab designed by laboratorians to do the work they must do to protect every Iowan," Director Christopher Atchison told a group of staff and dignitaries gathered for the event.

"I believe we are at the beginning of something great for Iowa, public health and the environment. This new facility provides an unprecedented opportunity to advance the Laboratory's service, research and educational missions."

Funded by federal and state appropriations, the three-story, $37.75 million building replaces the facilities that had been located in Oakdale Hall since the 1970s. Oakdale Hall was originally built as a tuberculosis hospital in 1917.

Although the new building is approximately the same square footage of the lab space in Oakdale Hall, its design as an open laboratory allows scientists to easily collaborate for routine work, as well as for environmental and public health emergencies.

"The University of Iowa's longest and most important commitments to the common good and public welfare of all Iowans are represented in this facility directly behind us, and what a facility it is," UI President Sally Mason said during dedication ceremonies.

"For too long, the lab has been housed in facilities that did not match the important work that goes on. The leaders and the staff for the lab, nevertheless, have managed to provide excellent services that Iowans need and that all Iowans expect. So we are very, very grateful now that this critical organization is able to work in a building that is commensurate with its tasks and its significance."

The new building was constructed using environmentally friendly LEED (Leadership in Energy and Environmental Design) principles. The LEED building certification program is the nationally accepted benchmark for the design, construction and operation of "green" buildings. The Hygienic Lab is the third University of Iowa LEED-certified building to be completed.

JULY

Five environmentalists from the State Hygienic Laboratory were part of the Project AWARE team that removed more than nine tons of trash from the East and West Nishnabotna Rivers.

AUGUST

At least 150 homes in Polk County will be tested by the Hygienic Lab for traces of lead as part of the clearance inspection process conducted by Polk County Health Department.

SEPTEMBER

How do you attract students to the field of laboratory science? The Hygienic Laboratory answered that question by creating a DVD-based game that highlights the many professions in a public health laboratory and the associated academic and training requirements.

OCTOBER

Four Emerging Infectious Disease fellows from the CDC and Association of Public Health Laboratories tackle vital projects, such as influenza surveillance, during their tenure at the Lab.

Surveillance and science combine to stop outbreak

The prompt detection of *Salmonella* by Hygienic Laboratory scientists stopped a nationwide outbreak and resulted in a product recall of 1.24 million pounds of ready-to-eat deli meat.

Late in 2009, cases of *Salmonella* were reported to PulseNet – an international infectious disease database coordinated by the CDC and utilized by the Hygienic Laboratory to conduct disease surveillance. *Salmonella* is a bacterium that causes foodborne illness with symptoms including diarrhea, fever and abdominal cramping. An Iowa woman reported similar symptoms to her doctor.

sur • veil • lance

The ongoing monitoring and observation of diseases and contaminants within a community.

A critical first step in solving the nationwide outbreak occurred when the woman's physician ordered a test for enteric pathogens, which was sent to the local clinical laboratory. After isolating *Salmonella*, that lab sent the organism to the State Hygienic Laboratory for full identification, including DNA fingerprinting using pulsed field gel electrophoresis.

Microbiologist Gina Kline entered the results into PulseNet, and found that they matched other *Salmonella* Montevideo isolates from other states. Through PulseNet, scientist can match the DNA fingerprints of *Salmonella*, *Shigella*, *E. coli* 0157H7 or *Listeria* from one confirmed illness to those collected in other parts of the country and the world. Linking cases by strain typing and epidemiologic data is a method for scientists to identify cases and recognize a potential outbreak.

The DNA fingerprint from the Iowa case of *Salmonella* Montevideo matched those of earlier reported cases. Epidemiological data collected from several of those cases indicated that the patients had consumed Italian-style deli meats. In the Iowa case, the confirmed patient had fortunately stored the suspected product in the freezer.

Scientists in the State Hygienic Laboratory Environmental Microbiology department tested the meat and confirmed the presence of the strain of *Salmonella* Montevideo in the food. The DNA fingerprint matched the *Salmonella* isolate from the patient. That critical link between the food and the patient completed the puzzle to identify the source of the outbreak.

Within hours, the product alert was announced. On Jan. 23, a Rhode Island-based company recalled more than a million pounds of ready-to-eat sausage products because of the possible *Salmonella* contamination. It was later determined that the pepper used in producing the meat was the source of the contamination.

"Thanks to the work of the physician who cared for the patient and ordered the test, the local clinical laboratory was able to identify the isolate, and the Hygienic Laboratory was able to link the organism to the deli meat product," said Dr. Michael Pentella, associate director of the State Hygienic Laboratory. "This resulted in the prevention of further spread of the disease and the resolution of this national outbreak."

NOVEMBER

The State Hygienic Laboratory and the Minnesota Department of Health conducted a mock drill to ensure the continuation of newborn screening services during an emergency.

DECEMBER

Miss Iowa 2009 Anne Michael Langguth becomes the Lab's first Environmental and Public Health Laboratory Ambassador. In the months ahead, she would bring awareness of a looming workforce shortage in public health to more than 10,000 students, teachers and other concerned citizens throughout Iowa.

JANUARY

The Centers for Disease Control and Prevention, the U.S. Food and Drug Administration and the U.S. Department of Agriculture's Food Safety and Inspection Service investigate a multistate outbreak of *Salmonella* Montevideo. The State Hygienic Laboratory is the first lab in the nation to link the outbreak to deli meats.

FEBRUARY

Students from West Branch Middle School who call themselves the "De-icers" are studying the environmental impact of ethylene glycol runoff near both the Eastern Iowa Airport and the Des Moines airport. The Hygienic Laboratory is helping to mentor the students on this science project and is testing a few samples for ethylene and propylene glycol.

A HERITAGE OF SERVICE

The recent accomplishments of the State Hygienic Laboratory were made possible in large measure by the numerous contributions made over the years by many staff members. This heritage of service was honored with a permanent gift made to the Laboratory during the Reward and Recognition ceremony on June 23.

Helen Richey (right) and Pam Kostle, building coordinator/safety officer, cut the ribbon on the memorial bench purchased for the Laboratory by the family of Mary Richey. Helen Richey is Mary's mother.

Mary Richey worked at the State Hygienic Laboratory for 32 years. She helped establish the asbestos program and assisted in coordination of the radiation response field teams. After Richey died in 2006, her family wanted to remember her dedication to environmental health with a gift to the Hygienic Laboratory. A bench located at the employee entrance of the new building and labeled with a tribute to Richey was dedicated during the award celebration.

That annual ceremony also was an opportunity for staff to salute Jim Watkinson who retired in 2010 after 50 years of service. Watkinson joined the Hygienic Laboratory in 1960 when it was a small public health laboratory housed in the Med Labs building near the University of Iowa Hospitals and Clinics. Fifty years later, as the State Hygienic Laboratory prepared to move into its new facility, Watkinson transitioned to retirement.

During a career that saw him advance from a junior lab assistant in the washroom to the supervisor of Central Services, Watkinson witnessed the burgeoning environmental movement and the advent of air, water and soil testing by the lab.

The 23 years that Mona Schultz devoted to the Laboratory were dedicated to measuring the quality of water in Iowa. Schultz brought her 20 years of hospital laboratory experience to the Environmental Microbiology department.

A heightened awareness of environmental issues over the years led to an increase in the volume of testing in the department, which expanded testing from public and private wells to include rivers, sludge and pools.

Jim Watkinson surveys the location of the new Hygienic Laboratory building prior to construction.

The service of these three is representative of the history of many employees who made the advancement of environmental and public health science the focus of their careers. On their shoulders, the Hygienic Laboratory continues to build upon this heritage of service.

Mona Schultz greets a colleague at her retirement party.

MARCH

Four researchers from Hohai University, Nanjin, China, visited the Hygienic Laboratory on March 10, to investigate the possibility of a collaborative project between the University of Iowa and Hohai University on research and education about the Mississippi and Yangtze Rivers.

APRIL

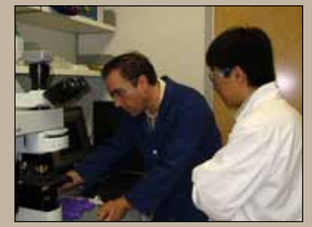
Lab scientist Trisha Kreman put her expertise to work more than 6,000 miles from the Hygienic Laboratory in April as part of a project funded by the Centers for Disease Control and Prevention, and the Association of Public Health Laboratories. Kreman assisted the Fiji Centre for Communicable Disease Control in Suva, Fiji, by conducting a laboratory assessment of its influenza surveillance program.

MAY

A host of local officials - including state legislators and Board of Regents members - tour the newest public health laboratory in the nation during dedication ceremonies. With the snip of a yellow ribbon, the State Hygienic Laboratory's new facility officially became the latest tenant on the UI Research Park campus in Coralville.

JUNE

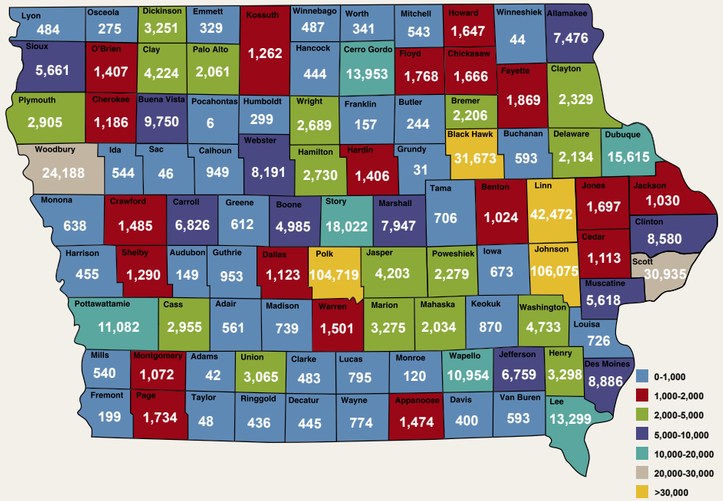
An ongoing study started at the Ankeny lab in 2009 may help identify areas of the state where children have higher exposures to mercury, cadmium and other heavy metals. Recently the Lab started reexamining samples from the blood lead program to identify possible exposure to other heavy metals and to pinpoint the geographic areas of these samples.



Number* of tests performed statewide by the State Hygienic Laboratory in FY10	
Environmental (air, soil, metals, waterways)	115,019
Infectious Disease**	163,021
Newborn Screening	286,340
Drinking Water	27,199
TOTAL TESTS PERFORMED IN FY10 = 591,579	

*Reflects approximation
**Includes testing performed at no charge for public health significance

Total Hygienic Laboratory Tests Performed in FY 2010



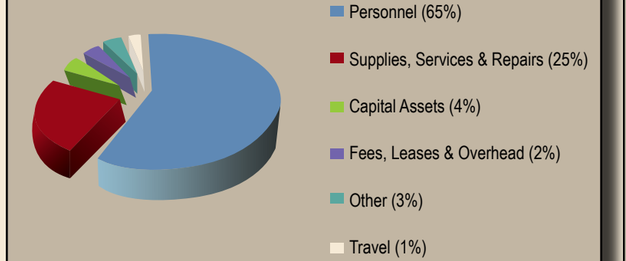
FISCAL YEAR 2010 FINANCIAL REPORT
STATE HYGIENIC LABORATORY AT THE UNIVERSITY OF IOWA

Assets	
Current (Cash & Accounts Receivable)	$ 2,561,198
Fixed, Net of Depreciation	$ 3,620,135
Total Assets	**$ 6,181,333**
Liabilities and Fund Balance	
Current (Salaries, Leases & Accounts Payable)	$ 1,306,134
Fund Balance – Grants, Contracts, Restricted Funds	$ 1,258,533
Fund Balance – Net Investment in Equipment	$ 3,616,666
Total Liabilities and Fund Balance	**$ 6,181,333**

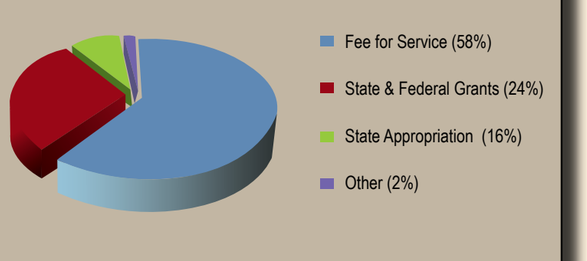
Statement of expenses for the year ended June 30, 2010

Personnel	$15,022,610
Supplies, Services & Repairs	$ 5,798,865
Capital Assets	$ 999,886
Fees, Leases & Overhead	$ 572,960
Other	$ 684,247
Travel	$ 223,511
Total Expenses	**$23,302,079**

Fiscal Year 2010 Expenses



Fiscal Year 2010 Funding Sources



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Mission Statement:

The State Hygienic Laboratory is established by the Iowa Code to protect the health of Iowans through:

- *Laboratory and field-based investigations of microbiological, chemical or other threats to human health;*
- *Recommending methods of overcoming and preventing disease; and*
- *Supporting state and local agencies in the ongoing evaluation of the state's environmental quality and public health.*

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