

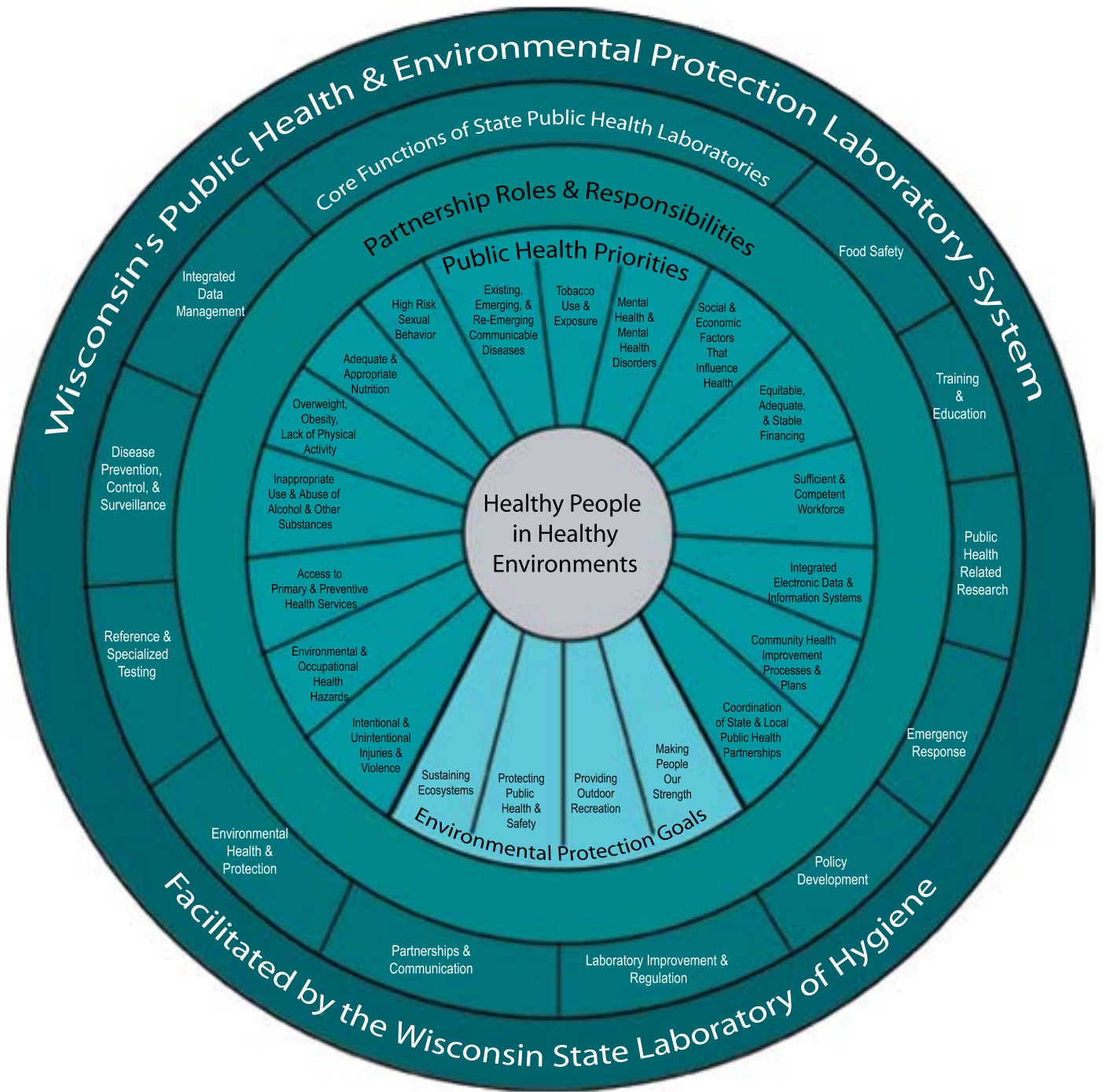


# *Helping Wisconsin Grow*



WISCONSIN STATE  
LABORATORY OF HYGIENE

**Annual  
Report  
2005**



# Letter from the Director

Dear Public Health System Partners,

Welcome to “*Helping Wisconsin Grow*” – the 2005 annual report of the Wisconsin State Laboratory of Hygiene (WSLH), your State’s public, environmental and occupational health laboratory.



Over the past 10 years, we have seen sweeping changes in what a public and environmental health laboratory is, what it does, and what it is going to have to be in the future. The theme of this year’s annual report “*Helping Wisconsin Grow*,” reflects changes in our state and the perennial WSLH goal of continuously transforming ourselves into the laboratory Wisconsin will need tomorrow to best serve our citizens. But we can’t achieve this goal alone.

We rely on the collaborative efforts of our partners like you to help us become a world class laboratory and together best serve the people of our State. This year, with the help of our Board of Directors, we committed to an aggressive realignment of resources to transform ourselves into a 21st century public health laboratory. This is embodied in four very non-traditional approaches to “laboratory” public health.

“Clinical” and “Environmental” laboratory testing will become even more intertwined. Pasteur has said that “*It takes a laboratory to tell the truth.*” Minute amounts of environmental chemicals, their breakdown products and metabolites will be recognized for their profound effect on health, and finding these measurements will become a vital role of the public health laboratory.

Increasingly, laboratory assessments will become genetic tests. Based in part on the knowledge gained through the human genome project, the definition of “disease” will rely on the identification of pairs of “defective” genes (alleles) known to be causative. Clearly, testing at the molecular level (genetic testing) will be a cornerstone of 21st century public health laboratory practice.

Emergency preparedness is an essential part of every public health laboratory’s mission. Post 9/11, our country decided to rely on its long-neglected public health system as the first line of defense against terrorism. At its basis is the early identification of threats – this means laboratory tests – or as Pasteur says “truth”. We, as a public health laboratory, have had to expand and retool our approach to our statewide mission. Whether from Mother Nature or manmade, recognizing threats requires a world class laboratory with world class partners. The clinical and environmental laboratories of our State have and will continue to “step up to the plate” as we grow together in this area.

Finally, laboratory data, whether from the WSLH or from our partners, is just test results. This data must be transformed into useful information and presented to critical decisionmakers at the national, state and local level in a meaningful way. Call it informatics, epidemiology, assessment or quality assurance. Ultimately, it is supporting our partners with valuable information.

In each of the four transformative areas, the WSLH is not alone – we are literally growing with, through and because of our partners. To each of you – *Thank You for Helping Wisconsin Grow.*

Sincerely Yours,

A handwritten signature in black ink that reads "Ronald H. Laessig". The signature is written in a cursive style.

Ronald H. Laessig, Ph.D.  
Director, State Laboratory of Hygiene  
Professor, Population Health Sciences  
Professor, Pathology and Laboratory Medicine

# Helping Our WSLH Partners

## Working Together To Fight Emerging and Re-Emerging Diseases

How do you fight a silent and nearly-invisible assailant? One that also easily adapts to your continuing defenses? Simple. You build strong partnerships and even stronger lines of communication.

For over 100 years, the WSLH has helped protect Wisconsin's citizens through its laboratory support of public health. And throughout that time, Laboratory staff members have tested for the gamut of diseases that have affected our State, from surprise visitors like monkeypox to always-present influenza. As agents of public health importance have evolved, so too have the capabilities of the WSLH. Likewise, through advances in laboratory technology and scientific knowledge, and the on-going commitment of laboratory partners, the public health laboratory network, as a whole, is better able to detect and identify new and re-emerging diseases.

While news headlines today are dominated by reports of Avian Influenza H5N1 emerging out of Asia, here in Wisconsin pertussis (Whooping Cough), West Nile virus and newly drug-resistant strains of bacteria and viruses are more visible on the local public health radar. It is these emerging and re-emerging diseases that Dr. Dave Warshauer, the WSLH's Communicable Disease Division's Assistant Director, cites as the current concern.

"Probably number one on the list is pertussis. We have had two major outbreaks since 2003 and it continues to be a problem," Warshauer said. "But we're out of outbreak mode and it has leveled off to a rather steady endemic rate with less than 300 tests per month. Those numbers compare to when we were running 300 tests a day during the outbreaks."

Working together with clinical laboratories, local health departments and the Wisconsin Department of Health and Family Services, the WSLH has helped increase the availability and fast turnaround testing of pertussis samples and awareness of this debilitating illness.

"Prior to 2004, we were pretty much the only laboratory in Wisconsin doing DNA-based polymerase chain reaction (PCR) testing for pertussis," Warshauer said. "During the outbreak, we helped Marshfield Clinic and other laboratories in the state to get up and running, providing specimens for validation of their testing methods and now they too offer PCR as a primary test."

The emergence of increasingly anti-microbial-resistant strains of familiar microbes is a challenge laboratorians at the WSLH and across Wisconsin face daily with *Streptococcus pneumoniae*, methicillin-resistant *Staphylococcus aureus*, *Salmonella* and other infectious agents. It is clear, however, that our public health system partners play an important role in the detection and diagnosis of disease. When laboratories across Wisconsin work together, the quality of patient care improves and disease prevention strategies become more effective.

Warshauer credits the WSLH's partnership with the Wisconsin Laboratory Response Network (WLRN) and its member clinical labs for this increased vigilance. "We continue to use the WLRN as our partner in supporting our surveillance studies," he said. "They've been very, very cooperative in sending in their samples to us. We get over 95% of isolates from reported cases, which is just superb. We also continue to do our teleconferences for training and educational activities for the agents that are out there to keep laboratories up to speed."

"I think from the outset of our program we have had a high level of cooperation and it has been maintained at a high level. The laboratories receive data back that shows them what is circulating and they can communicate that information to their clinicians. The laboratories also get data on antimicrobial resistance. We can communicate that there is resistance out there and that's testing that they don't do. So we can say 'Tell your physicians that we are seeing 10-12% resistance of *Salmonella* species to ciprofloxacin, so they might want to utilize a different drug'."

# Helping Wisconsin Businesses

## WSLH Adds OSHA Health Consultation Program to its Team

The Wisconsin State Laboratory of Hygiene added an important new facet to its organization with the transfer of the Occupational Safety and Health Administration (OSHA) Health Consultation Program from the Wisconsin Department of Health and Family Services.

“This is an opportunity for two programs that already interact to work more closely together,” said Terry Burk, the director of the Wisconsin Occupational Health Laboratory (WOHL) and assistant director of the WSLH’s Environmental Health Division (EHD).

“The OSHA Consultation team members are out in the field taking samples, meeting employers, improving safety and health at the workplace, while our laboratory handles their testing and lab work. Now, we look forward to our chemists going out in the field to better understand what the OSHA staff does, to see the work environments and see how our little bit fits into the whole process.

“The OSHA staff can now also see what our chemists do as well,” Burk added. “That it’s not just taking a sample, popping it into a machine and the results come out, but seeing the whole process of taking a sample from the field into the laboratory and back out to help people in their workplace. Understanding what happens throughout the whole process is mutually beneficial.”

Environmental Health Manager Terry Moen and her staff retain their OSHA Health Consultation Program name and have settled into a new home within the WSLH’s Workplace and Ambient Air program at the WSLH’s Agriculture Drive facility. Despite a change in address, the OSHA Health Consultation Program continues to provide its services to private sector employers by providing onsite consultation at the request of the owner or manager of a private company to assist them in providing their employees with a place of employment which is safe and healthful. This service is provided free through federal and state funds.

“We’re delighted to continue our work as part of the Wisconsin State Laboratory of Hygiene,” Moen said. “This new home has allowed us to continue our support of the small business community in Wisconsin and as part of the University of Wisconsin, we also hope to work with our sister departments to enhance occupational safety and health issues.”

Now through their work together, samples collected during site visits by the Health Consultation team, and those of similar programs in 41 other states, are tested by WSLH chemists at the Environmental Health Division facility. Moen believes this enhances the work of the Health Consultation Program. “Being part of the Lab has allowed us to have a closer working relationship with the analytical chemists on state-of-the-art techniques.”



Employees of Trostel, Ltd., hold their SHARP banner at an award ceremony in their honor in Lake Geneva, Wis.

In addition to their site visits and sample testing, Moen and her staff act as ambassadors from the WSLH and OSHA and have helped eight Wisconsin businesses achieve Safety and Health Achievement Recognition Program, or SHARP, status since the transfer last year.

SHARP honorees operate top safety and health management systems while also maintaining an injury and illness rate below the national average for their industry. These companies help set a high standard for work environments that make safety and health a top priority for all employees in our state and have joined an elite group of less than 1,000 businesses nationwide.

# Helping Wisconsin Communities

## WSLH Staff Help Prepare Security for our State's Water Supply



A safe water supply is important to all of us. From washing our clothes and preparing our meals to a drink before bedtime, most of us never stop and think about the water we are using every day.

In this age of heightened terrorism awareness though, the safety of our water supply is of the utmost importance and the WSLH agrees. Last year, WSLH Chemical Emergency Response Coordinator Dave Degenhardt and Assistant Coordinator Al Spallato participated in a workgroup of Wisconsin's primary stakeholders in water security who were committed to creating an Emergency Response Drinking Water Collection Kit.

The kit is designed for use by water utilities after a credible threat has been determined and has been distributed to over 200 sites around Wisconsin. It is simple and safe to use for collecting water for testing of biological, chemical, and radiological agents. Further, the kit's straightforward design will help provide quality data from testing and requires little work to maintain.

The workgroup brought together Wisconsin's local and state officials. Together with Steve Elmore, of the Department of Natural Resources' (DNR) Drinking Water Program, and Janice Lee, formerly of the Department of Health and Family Services (DHFS), Degenhardt and Spallato partnered with representatives from Emergency Management, the Justice-Crime Lab, UW Veterinary Diagnostics Laboratory and the Department of Agriculture, Trade and Consumer Protection. Additional partners included Milwaukee Water Utility, the Milwaukee Health Department, the Wisconsin Rural Water Association (WRWA) and regional HazMat teams.

With the kits distributed across the state, Degenhardt believes that the group's hard work is an important starting point for water emergency preparedness.

"Better response in our State and a greater interest and support for water and food security really drove the need for this workgroup," Degenhardt said. "We struggled in the beginning with different opinions on our group's objectives, but we worked hard and worked well together to meet our goals. Now, the kits have been well-received and are gaining exposure regionally. Several states have requested review our kit, while South Dakota and Iowa have plans to copy our kit. I think this speaks highly of our work and reinforces that we are doing the right thing."

Here in Wisconsin, the kits were initially distributed to local water utilities for housing and the positive response continues to grow. "It's important that we continue building partnerships with local health departments and municipal labs in our state, bringing them on board in the process and building awareness of the kits themselves," Degenhardt said. "Also, increasing communication between our water utilities, wastewater treatment plants and water labs because they could also be part of the collection process and might find contaminated water in their supplies."

As word has spread, more groups have begun to participate including the recently-formed Wisconsin National Guard 54th Civil Support Team which assists authorities in response to domestic weapon of mass destruction incidents. Degenhardt notes that this an important group to add support, but also stresses that our vigilance does not end with the kit.

"The kits give us something to put our arms around," he said, "but I tell people to not get a false sense of security. The kits don't answer all of the questions that will arise in each incident, but they are adaptable and as technology evolves and additional analytical methods are developed, we should be able to adapt the kits to meet those needs."

# Helping Wisconsin Families

## Our State's Newborns Screened for 48 Genetic Disorders

Wisconsin took an important step towards protecting the lives of newborn children in 2005. Families and healthcare providers of babies born in our state now receive enhanced newborn screening information for 48 inheritable disorders — 47 metabolic/genetic disorders plus hearing. This includes the 29 disorders included in the uniform newborn screening panel promoted by the U.S. Department of Health and Human Services and endorsed by the March of Dimes.

“The change was made to provide physicians and parents with more complete information regarding newborn screening in Wisconsin,” explains Gary Hoffman, Wisconsin’s Newborn Screening Laboratory Manager.

“Our focus is always on doing what’s best for the health of babies born in our state.”



According to state law (WS 253.13), the newborn screening program tests every baby born in Wisconsin for a variety of inherited disorders, such as phenylketonuria (PKU), hypothyroidism, cystic fibrosis and sickle cell disease. If left untreated, these disorders can lead to poor growth, neurological impairment, brain damage, organ failure, and even death.

However, if these conditions are detected early through a simple blood test and treated properly, most often with special diets, vitamin supplements or medication, the affected individuals have a greater chance of survival and a significantly improved quality of life. Although not required by state law, 103 of 105 birthing hospitals in the state also provide voluntary newborn hearing screening. In 2004, 96.3% of newborns received hearing screening.

The Newborn Screening Program is administered by the Wisconsin Department of Health and Family Services (DHFS), with all of the testing occurring at the Wisconsin State Laboratory of Hygiene (WSLH) located on the University of Wisconsin-Madison campus. About 70,000 newborns are tested each year, of which about 100 babies are found to have a serious inherited disorder. Discovering these disorders early often allows doctors to begin treatment before the disorder becomes life-threatening or debilitating to the baby.

Although the changes in the newborn screening panel increase the reportable disorders from 26 to 48, no additional blood sample is required to perform the analyses. The expansion represents a better definition of the types of disorders that can be identified using state-of-the-art technology called tandem mass spectrometry (MS/MS). Wisconsin was one of the first states to fully implement MS/MS for newborn screening.

“In 2000 when we started using tandem mass spectrometry, we defined many of the disorders as representing broad categories,” says Hoffman. “Now after five years of our own experience and the experience in other state screening programs that eventually implemented MS/MS technology, we conclude that the original categories should be re-defined so that the specific disorders identified by the screening process are listed. In order to give physicians and parents more complete information, we are now changing the panel disorders to reflect this new reality. As technology evolves, we remain committed to helping protect the health of babies born in Wisconsin.”

For more information on newborn screening in Wisconsin, please visit these Web sites:

- <http://www.slh.wisc.edu/newborn>
- [http://dhfs.wisconsin.gov/DPH\\_BFCH/Newborn\\_Screen/](http://dhfs.wisconsin.gov/DPH_BFCH/Newborn_Screen/)

# WSLH Notables

## Celebrating the Achievements of the State Laboratory Staff

### Fall 2004

WSLH Director **Ronald Laessig, Ph.D.**, earned the first-ever Gold Standard for Public Health Laboratory Excellence Award from the Association of Public Health Laboratories (APHL).

Additionally, the March of Dimes honored Laessig with the Wisconsin Chapter's first annual Prevention Award recognizing "the untiring efforts of an individual or group to fulfill the mission of the March of Dimes ...". Laessig later celebrated 25 years at the helm of the WSLH and 39 years working in the Laboratory overall.

The American Society of Cytopathology (ASC) named WSLH Medical Director **Daniel Kurtycz, M.D.** as the 2004 President's Award honoree in recognition of his many contributions to the ASC. Kurtycz was also elected to serve a four-year term on the Society's Executive Board.

Completing a one-year project related to the creation of a continuing leader learning community, WSLH Associate Director **Peggy Hintzman, MBA**, graduated from the National Public Health Leadership Institute at the The School of Public Health at the University of North Carolina - Chapel Hill.

The Wisconsin Water Association (WWA) honored **Mike Arndt, Ph.D.**, as the Researcher of the Year for his work on "gross alpha" testing on drinking water. Arndt is an assistant scientist in the WSLH's Radiochemistry department under Supervisor **Lynn West**. Both Arndt and West also received a significant grant from the American Water Works Association Research Foundation (AWWARF) to further this research.

### Spring 2005

The International Association for Chemical Testing (IACT) presented the 2005 Kurt M. Dubowski Award to WSLH Toxicology Section Supervisor **Patrick Harding** for his outstanding career contributions to the field of chemical testing in relation to transportation or workplace safety. Only the third honoree to achieve this premiere peer-recognized award, Harding received the award from Dr. Dubowski himself who said that the IACT "could not have selected a more worthy recipient".

Citizen advocacy group, Citizens Against Drug Impaired Drivers (C.A.N.D.I.D.), lauded **Amy Cochems**, one of the WSLH's primary Toxicology Liaisons to the Drug Recognition Expert (DRE) program in Wisconsin, for her outstanding dedi-

cation. The DRE program trains police officers to identify drug-impaired drivers and consists of an intense 80 hour regimen of classroom instruction in drug pharmacology and effects as well as demonstration of the DRE testing techniques. The training culminates with hands on evaluation of drug impaired individuals. Cochem provides instruction, support and training to participating officers throughout the program.

### Summer 2005

The Wisconsin Public Health Association (WPHA) honored WSLH Public Affairs Manager **Jan Klawitter, M.A.**, with the 2005 Presidential Citation Award during the annual joint conference of the WPHA and the Wisconsin Association of Local Health Departments and Boards (WALHDAB). A member of the WPHA since 1997, Klawitter has served the organization through work on the Board of Directors and as a member and chair of several committees. Most recently, she served as the Co-Chair of the Joint WPHA-WALHDAB Public Affairs committee.

The University of Wisconsin Sea Grant Institute's Biennial Report (2002-2004) featured WSLH Environmental Health Division Director **William Sonzogni, Ph.D** for his identification and research with colleague Jon Manchester of high levels of PBDEs (polybrominated diphenyl ethers), a common flame retardant, in Lake Michigan fish. As a result of this work, PBDE is now considered a priority contaminant and monitoring of PBDEs has increased. The report of this project's initial findings, published in *Environmental Science & Technology*, was six months later "one of the most cited" papers in the field by the Institute for Scientific Information.

The American Society for Clinical Pathology has elected **John Shalkham, M.A., SCT(ASCP)** to the Society's Associate Council as a member-at-large for a three year term. Shalkham is the Program Director for the WSLH School of Cytotechnology and Manager of the WSLH's Disease Prevention Division.

The Oracle Development Tool User's Group (ODTUG) selected WSLH Division of Public Health Informatics and Surveillance Analyst **Dave Schleis'** paper, *A PHP Eye for the Oracle Guy*, as a top-five finalist for the ODTUG Now! Conference Editor's Choice Award.

# WSLH Leadership



**WSLH Board of Directors:** (front, L to R) D. Turski, M. Kopecky, S. Buroker; (back, L to R) G. Million, J. Stanley, D. Berwanger, R. Bagley, D. Taylor, M. Russell. Not pictured: D. Bazzell, H. Bostrom.



**WSLH Administration:** (front, L to R) M. Buechner, P. Hintzman, T. Burk, W. Sonzogni; (back, L to R) J. Chapin, D. Hassemer, R. Laessig, D. Kurtycz, P. Shult

## 2004–05 WSLH Board of Directors

Member Name	Represents	Term Expires
Robert Bagley Laboratory Director, City of Racine Health Department	Local Public Health Departments	May 1, 2008
David Berwanger Laboratory Director, CT Laboratories	Private Environmental Testing Laboratories	May 1, 2007
George Million Retired, Marathon County Health Department	Public Member	May 1, 2007
Michael Russell Senior Industrial Hygienist Lead Occupational Safety & Health Auditor, Earth Tech, Inc.	Occupational Health Laboratories	May 1, 2006
John Stanley Dane County Coroner	Medical Examiners and Coroners	May 1, 2007
David Taylor Director of Special Projects, Madison Metropolitan Sewerage District	Public Member	May 1, 2006
Dr. Deborah Turski Associated Pathologists, St. Marys Hospital	Clinical Laboratory Physicians	May 1, 2007

The following WSLH Board Members are Agency or University Appointed with No Official Expiration Date.

Member Name	Appointed By	Represents
Darrell Bazzell	University of Wisconsin System	President Kevin P. Reilly
Herb Bostrom	Dept. of Health & Family Services	Secretary Helene Nelson
Susan Buroker	Dept. of Agriculture, Trade & Consumer Protection	Secretary Rod Nilsestuen
Mary Jo Kopecky	Dept. of Natural Resources	Secretary P. Scott Hassett
Ronald H. Laessig, Ph.D.	Director of WSLH (Ex Officio)	WSLH

Please Note: WSLH Board membership changed in January 2006. Please see <http://www.slh.wisc.edu/board/members.php> for updated list.

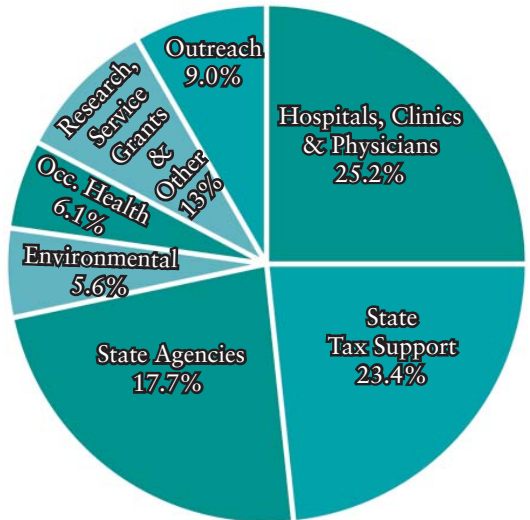
## 2004–05 WSLH Administration

Name	Title
Ronald H. Laessig, Ph.D.	Director
Daniel Kurtycz, M.D.	Medical Director & Director, Disease Prevention Division
Peggy Hintzman, MBA	Associate Director & Director, Resource Division
Mark Buechner, CPA	Chief Fiscal Officer
Terry Burk, CIH	Director, Wisconsin Occupational Health Laboratory Assistant Director, Environmental Health Division
John Chapin, M.S.	Director, Public Health Informatics & Surveillance Division
David J. Hassemer, M.S.	Director, Laboratory Improvement Division
Peter A. Shult, Ph.D.	Director, Communicable Diseases Division
William C. Sonzogni, Ph.D.	Director, Environmental Health Division

# Financial Information: 2004-05

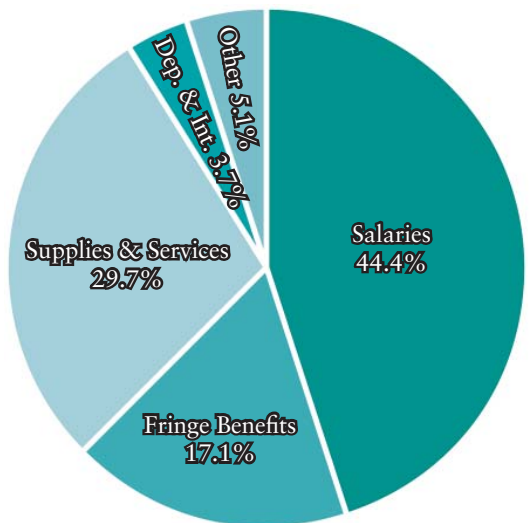
## Revenues

State Tax Support	\$8,474,191
Laboratory service fees from:	
State Agencies	6,420,633
Hospitals, Clinics, Physicians	9,132,069
Environmental/Water Testing Services	2,059,422
Occupational Health Services	2,197,747
Outreach Programs	3,250,391
Research, Service Grants, and Other	4,735,085
<b>Total Revenues</b>	<b>\$36,269,537</b>



## Expenses

Salaries	\$15,111,244
Fringe Benefits	5,801,896
Supplies and Services	10,113,667
Depreciation and Interest	1,245,559
Other Expenses	1,748,368
<b>Total Expenses</b>	<b>\$34,020,734</b>



<b>Net Increase in Assets</b>	<b>\$2,248,803</b>
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**Note:** The net increase in assets represents 6.2% of total revenues and was generated through extraordinary clinical workloads in response to the Pertussis outbreaks and from federal equipment grants for emergency preparedness.



Administration &  
Clinical Laboratory Divisions  
465 Henry Mall  
Madison, WI 53706  
(888) 494-4324

Environmental Health Division  
2601 Agriculture Drive  
Madison, WI 53718  
(888) 442-4618

Please visit the WSLH Web site at:  
<http://www.slh.wisc.edu>

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Writer/Designer: Jessica D. Burda; Writer/Editor: Jan Klawitter; Editors: Peggy Hintzman, Dave Hassemer and WSLH Staff.



University of Wisconsin – Madison  
465 Henry Mall  
Madison, WI 53706-1578

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