

December 1999

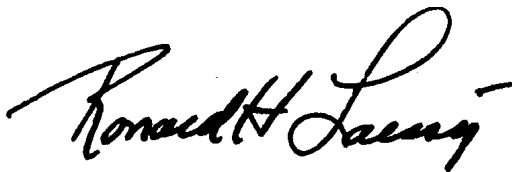
Dear Colleagues and Partners,

Welcome to the second edition of the Wisconsin State Laboratory of Hygiene's *Research Annual Report*. It is a compilation of the broad spectrum of research work being done by your public and environmental health laboratory. It is a key component of our Laboratory's commitment to the University of Wisconsin's mission of "creating and disseminating" knowledge.

The items listed in this report describe efforts completed during the time period of July 1, 1997, through June 30, 1998. It speaks well of the productivity of our staff at all levels. The report also summarizes training and outreach conducted by the WSLH. Outreach, in all forms, is an equally important part of the WSLH's statewide mission to be Wisconsin's public and environmental health laboratory.

I invite you to look through the report and get back to us with any comments about its contents. Like our service and testing mission, our research and outreach programs are vital components of our commitment and dedication to all the citizens of Wisconsin.

Sincerely,



Ronald H. Laessig, Ph.D.
Director, Wisconsin State Laboratory of Hygiene
Professor of Pathology and Laboratory Medicine
Professor of Preventative Medicine

Summary Report of WSLH Research, Teaching and Outreach Activities Related to Our UW-Madison Mission

For the period of July 1, 1998-June 30, 1999

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WSLH Strategic Leadership Team

Ronald H. Laessig, Ph.D.	Director, WSLH	262-0322
Peggy Hintzman, M.B.A.	Assistant Director, WSLH	262-8856
David J. Hassemer, M.S.	Director, WSLH Proficiency Testing	833-1770
Daniel Kurtycz, M.D.	Medical Director and Director, Disease Prevention Division	262-9461
Cynthia J. McIntosh, M.A.	Associate Director, WSLH and Director, Resources Management Division	262-0338
John Pfister, M.S.	Epidemiologist, Communicable Disease Division	262-7404
John Shalkham, M.A.	Manager, Disease Prevention Division	265-9191
Peter A. Shult, Ph.D.	Director, Communicable Disease Division	262-5419
William C. Sonzogni, Ph.D.	Director, Environmental Health Division	224-6200

I. Research Published in Peer-reviewed Journals

1998

1. Anderson, H.A., Falk, C., Hanrahan, L., Olson, J., Burse, V.W., Needham, L., Paschal, D., Patterson, D. (Jr.), Hill, R.H. (Jr.), Sonzogni, W.C. and others. "Profiles of Great Lakes critical pollutants: a sentinel analysis of human blood and urine." *Environ. Health Perspectives*, 106:279-289, 1998.
2. Anderson, H.A., Hanrahan, L., Falk, C., Tilden, J., Olson J., Sonzogni, W.C. and others. "Sport fish consumption: an important route of exposure to persistent chemical pollutants." *Eur. J. Oncol.* 3:321-327, 1998.
3. Ehrmeyer, S.S., Laessig, R.H. "A Guide to Waived Glucose POCT Regulatory Requirements." *Advance/Laboratory* 7(6):48-52, 1998.
4. Ehrmeyer, S.S., Ancy, J.J., Laessig, R.H. "Oxygenation: Measure the Right Thing." *Respiratory Therapy*. 11(3):26-28, 1998.
5. Jarrard, D.F., Konoshita, J., Shi, Y., Sandefur, C., Hoff, D., Meisner, L.F., Chang, C., Herman, J.G., Isaacs, W.B., Nassif, N. "Methylation of the Androgen Receptor Promoter CpG Island is Associated with Loss of Androgen Receptor Expression in Prostate Cancer Cells." *Cancer Research*, 58:5310-5314, 1998.
6. Logrono, R., Harris, C., Kent, M., Meisner, L. "Reply to Geoffrey A. Machin." *Am. J. Med. Genet.*, 78:390, 1998
7. Logrono, R., Kurtycz, D.F.I., Sproat, I.A., Shalkham, J.E., Stewart, J.A., Inhorn, S.L. "Multidisciplinary Approach to Deep-Seated Lesions Requiring Radiologically Guided Fine Needle Aspiration." *Diagn Cytopath*, 18: 338-342, 1998
8. Noll, R.J., Zorn, M.E., Mathew, J., Sonzogni, W.C. "Interfering contaminants in carbon dioxide solvent used in the supercritical fluid extraction of polychlorinated biphenyls." *J. Chromatogr. A*, 799:259-264, 1998.
9. Richkind, K., Loew, T., Meisner, L., Harris, C., Wason, D. "Identical Cytogenetic Clones and Clonal Evolutions in Non-infant Monozygous Twins with Acute Myeloid Leukemia: Retrospective Presymptomatic Detection by Interphase FISH Analysis." *Am. J. Pediatric Hematology and Oncology*, 20:264-267, 1998.
10. Roels, T.H., Frazek, P.A., Kazmierczak, J.J., MacKenzie, W.R., Proctor, M.E., Kurzynski, T.A., Davis, J.P. "Incomplete Sanitation of a Meat Grinder and Ingestion of Raw Ground Beef: Contributing Factors to a Large Outbreak of *Salmonella typhimurium* Infection." *Epidemiology and Infection*, 1998.

11. Schiller, J.H., Bittner, G., Wu, S., Meisner, L.F. "Karyotypic Changes Associated with Spontaneous Acquisition and Loss of Tumorigenicity in a Human Transformed Bronchial Epithelial Cell Line: Evidence for In-Vivo Selection of Transformed Clones." *In Vitro Cell. Dev. Biol.*, 34:283-289, 1998
12. Schilling, M., Povinelli, L., Krause, P., Gravenstein, M., Ambrozaitis, A., Jones, H., Drinka, P., Shult, P., Powers, D., Gravenstein, S. "Efficacy of Zanamivir for Chemoprophylaxis of Nursing Home Influenza Outbreaks." *Vaccine*, 16:1771-1774, 1998.
13. Temte, J.L., Shult, P.A., Kirk, C.J., Amsbaugh, J. "Effects of Viral Respiratory Disease Education and Surveillance on Antibiotic Prescribing." *Fam Med*; 31 (2):101-106, February 1999.
14. Tompkins, D.T., Kurzynski, T.A., Chappell, R.J., Zeltner, W.A., Anderson, M.A. "Effect of Florescent Illumination on Bacteria Supported on Glass Slides." *J. Advanced Oxidation Technologies*, 1998.
15. Yaeger, T.R., DeVriess, Jarrard, J.F., Kao, C., Nakada, S., Moon, T.D., Bruskewitz, R., Stadler, W., Meisner, L.F., Gilchrist, K.W., Newton, M.A., Woldman, F., Reznikoff, C.A. "Overcoming Cellular Senescence in Human Cancer Pathogenesis." *Genes Devel.*, 12:163-174, 1998.
16. Zilmer, M., Harris, C., Steiner, S., Meisner, L. "Use of Non-specific DNA Probes to Detect Diagnostic Translocations Demonstrated by the t(X;18) in Synovial Sarcoma." *Am. Pathology*, 152:1171-1177, 1998.

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17. Ehrmeyer, S.S., Laessig, R.H. "The American (U.S.A.) Perspective *Six Years Later*: Complying with CLIA'88 (Federal) Regulations." *Accreditation and Quality Assurance Journal*, 4(3):93-98, 1999.
18. Kent-First, M., Muallem, A., Shulz, J., Pryor, J., Roberts, K., Nolten, W.E., Meisner, L., Chandley, A., Gouchy, G., Jorgensen, L., Havinghurst, T., Grosch, J. "Defining Regions of the Y-chromosome Responsible for Male Infertility and Identification of a Fourth AZF Region (AZFd) by Y-chromosome Microdeletion Detection." *Molecular Reproduction and Development* 53: 27-41, May 1999.
19. Laessig, R.H., Ehrmeyer, S.S. "Lab 2000: Fundamental Features — Proficiency Testing —Then, Now and the Future." *Clinical Chemistry News* 25:18-20, 1999.
20. Zorn, M.E., Gibbons, R.D. and Sonzogni, W.C. "Evaluation of approximate methods for calculating the limit of detection and limit of quantification." *Environ. Sci. Technol.*, 33:2291-2295, 1999.

II. Other Publications

1998

1. Battigelli, D.A. United States Environmental Protection Agency, Safe Drinking Water Branch (Region V). Wisconsin Migrant Worker Camp Drinking Water Quality Study. July 1998.
2. Hoffman, R., Chauret, C., Standridge, J., Peterson, L., "Flow Cytometric Evaluation of Anti-*Cryptosporidium* and Anti-*Giardia* Antibodies." American Water Works Association Water Technology Conference Proceedings. November 1998.
3. Kubista, L., Shult, P., Beyer, T., Donahue, L., Friedrichs, J., Harder, P., Reed, K., Singh, A., Hintzman, P. "Laboratory Testing for Tuberculosis in Wisconsin: Current Status and Recommendations for Improvement." White Paper for Partners for the Future: Exploring Roles of Public Health Laboratories. October 29, 1998.
4. Mager, A., Standridge, J., Peterson, L. "Source and Occurrence of Pathogens in Watersheds." American Water Works Association - Water Quality Technology Conference Proceedings. November 1998.
5. Markwardt-Elmer, P. "HIV Testing of Subjects in HIV-1 Vaccine Trials: Comments from the State Laboratory of Hygiene." *AIDS Update*. Fall 1998.
6. Olstadt, J., Standridge, J., and Swailes, D. "A Study of the Seasonal Occurrence of Total Coliform Positivity in Drinking Water." American Water Works Association - Water Quality Technology Conference Proceedings. November 1998.

1999

7. Anderson, H., Arneson, R., Bagley, R., Burk, T., Farmer, D., Linke, G., Moen, T., Saryan, L., Sonzogni, W. and Stanton, N. "Public health related lead (Pb) testing in Wisconsin." White Paper for Partners for the Future: Exploring Roles of Public Health Laboratories. May 1999.
8. Battigelli, D.A. United States Environmental Protection Agency, Office of Water. Workshop on Fecal Indicators for Ground Water Sampling Under the Groundwater Rule – Summary Report, Feb. 16-17, 1999. Arlington, VA.
9. Prieve, A.F. "How Good is that Laboratory Test?" *AIDS Update*. Summer 1999.

III. Research Papers in Progress

1. Arora, H., Abbaszadegan, M., Battigelli, D.A., LeChevallier, M. "Effectiveness of Chlorine Dioxide to Meet the ESWTR and D/DBP Rule." Submitted to *Journal of the American Water Works Association* (May 1999).
2. Battigelli, D.A., Sobsey, M.D. "Removal of Hepatitis A Virus and Model Viruses by Conventional Water Treatment Processes." Submitted to *Journal of the American Water Works Association* (July 1999).
3. Battigelli, D.A. and Argue, B.T. "Measurement of the Isoelectric Point of Pathogenic Microorganisms by Preparative Isoelectric Focusing." Submitted to *Biotechniques* (May 1999).
4. Battigelli, D.A. "Enteric Viruses in Groundwaters of the Northern Midwest." Submitted to *Applied and Environmental Microbiology* (May 1999).
5. Drinka, P., Krause, P., Gravenstein, S., Shult, P., Schilling, M., Voeks, S. "Non-Influenza Respiratory Viruses May Overlap and Obscure Influenza Activity." *J. Am. Geriatr. Soc.* (Sept. 1999).
6. Drinka, P., Langer, E., Krause, P., Gravenstein, S., Schilling, M., Shult, P., Voeks, S. "Comparison of Mortality Following Isolation of Various Respiratory Viruses in Nursing Home Residents." *Infect. Control Hosp. Epidemiol.* (1999).
7. Ehrmeyer, S.S., Laessig, R.H. "The Effect of Legislation (CLIA'88) on the Setting of Quality Specifications by US Laboratories." *Scandinavian Journal of Clinical Laboratory Investigation* (1999).
8. Ehrmeyer, S.S., Laessig, R.H. "Point of Care Testing: Implementation and Practice of Cost-Effective Total Quality Management." *Accreditation and Quality Assurance Journal* (Sept. 1999).
9. Harrington, G.W., Battigelli, D.A. "Removal Efficiencies of Emerging Pathogens by Traditional and Innovative Water Treatment Processes." Submitted to *Journal of the American Water Works Association* (Jan. 2000).
10. Haupt, T.E., Stroesenruther, J., Johnsen, D., Wittkopf, T., Proctor, M. "Physical and Environmental Factors in a Respiratory Illness Outbreak Associated with Nitrogen Dioxide Intoxification." Submitted to *Environmental Health Perspectives* (May 1999).
11. Hoffman, R., Chauret, C., Standridge, J., Peterson, L. "Flow cytometric evaluation of anti-*Cryptosporidium* and anti-*Giardia* antibodies." Submitted to the *J. American Water Works Association* (April 1999).

12. Jarrard, D., Sarkar, S., Shi, Y., Yaeger, T.R., Magrane, G., Kinashita, H., Nassif, N., Meisner, L., Newton, M.A., Waldman, F., Reznikoff, C. "p16/pRb Pathway Alterations are Required for Bypassing Senescence in Human Prostate Epithelial Cells. *Cancer Research* (1999)
13. Mager, A., Standridge, J., Peterson, L., "Source and Occurrence of Pathogens in Watersheds." Submitted to *J. American Water Works Association* (June 1999).
14. Proctor, M.E., Durch, J.C., Kurzynski, T., Manner, K., Ringhand, J.R., Ahrabi-Fard, S. "An Outbreak of E. coli 0157:H7 Associated with Eating Cheese Curds." *Applied and Environmental Microbiology*, in preparation.
15. Temte, J.L., Shult, P.A., Kirk, C.J., Amspaugh J. "Not All Ambulatory Physicians Prescribe Antibiotics at High Rates". (Submitted) 1999.
16. Zorn, M.E., Noll, R.J., Anderson, M.A., Sonzogni, W.C. "In-line catalytic purification of carbon dioxide used in supercritical fluid extraction." Submitted to *Anal. Chem.* (July 1999).

IV. Papers Presented at Scientific Meetings

1998

1. DeMets, A., Aeschlimann, M., Amsterdam, L., Pfister, J.R. "Testing and Treatment Practices for *Chlamydia trachomatis* Infections: Narrowing the Gap Between Public Health and Managed Care." Paper presented at the 126th Annual Meeting of the American Public Health Association, November 15-18, 1998; Washington D.C. Poster presented at the Wisconsin Public Health Association Annual Conference, June 3-4, 1999; Appleton, WI.
2. Ehrmeyer, S.S., Laessig, R.H. "Creating a new quality (QA/QC) paradigm for near patient testing: automated, computer managed and analyst independent." *Proceeding of the 17th International Symposium on Electrolytes, Blood Gases, and Other Critical Analytes:* (D'Orazio, P., Fogh-Anderson, N., Larsson, L., eds.), OMNIPRESS, 1998; Madison, WI.
3. Hoffman, R., Chauret, C., Standridge, J., Peterson, L. "Flow cytometric evaluation of Anti-*Cryptosporidium* and Anti-*Giardia* Antibodies" American Water Works Association Water Technology Conference. November 3, 1998; San Diego, CA.
4. Laessig, R.H., Ehrmeyer, S.S. "Complying with Regulations and Passing Inspections: Successful Strategies and Practical Game Plans." American Society for Clinical Pathology Regional Meeting, December 1998; Phoenix, AZ; December 1998, Houston, TX.
5. Laessig, R.H., Ehrmeyer, S.S. "Point of Care Testing: Living with Multiple Regulators." American Society for Clinical Pathology, October 1998; National Radio Telephone Seminar.

6. Laessig, R.H., Ehrmeyer, S.S. "Complying with Regulations (CLIA, JCAHO, CAP, COLA) and Passing Inspections: Successful Strategies and Practical Game Plans." American Association for Clinical Chemistry National Convention, August 1998; Chicago, IL.
7. Laessig, R.H., Ehrmeyer, S.S. "Complying with Laboratory Regulations." Pathology Regional Commissioners – Veterans Health Administration, Department of Veterans Affairs, July 1998; Washington, D.C.
8. Mager, A., Standridge, J., Peterson, L. "Source and Occurrence of Pathogens in Watersheds." American Water Works Association-Source Water Protection Symposium. October 1998; San Francisco, CA. Also presented at American Water Works Association-Water Quality Technology Conference. November 1998; San Diego, CA.
9. Meisner, L. "The Role of Chromosome Mutations Versus the Microenvironment in Skin Cancer." 7th Mohs Surgery Conference and Workshop; July 10-11, 1998; Madison, WI.
10. Olstadt, J., Standridge, J., Swailes, D. "A Study of the Seasonal Occurrence of Total Coliform Positivity in Drinking Water." American Water Works Association³/₄ Water Quality Technology Conference. November 1998; San Diego, CA
11. Pfister, J.R., Painter, J., Rabins, C. McGinnis, S. "*Chlamydia trachomatis* Infections in Women Attending Family Planning and STD Clinics: Prevalence, Risk Indicators, and Selective Screening Criteria." Paper presented at the National STD Prevention Conference, December 6-9, 1998; Dallas, TX.
12. Sonzogni, W.C. "Future roles of state government laboratories." Paper presented at the Midwest Environmental Laboratory Summit, December 8-9, 1998; Chicago, IL.

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13. Kirk, C., Proctor, M., Haupt, T., Shult, P., Reisdorf, E. "1998 Wisconsin Calicivirus Outbreaks." (Poster). Wisconsin Public Health Association Annual Meeting, June 3-4, 1999; Appleton, WI.
14. Kurzynski, T.A., Evans, P., Boxrod, D. "Problems in Correct Identification of *E. coli* 0157:H7." Presented at the CDC-sponsored Annual Pulse Net Update Meeting, 1999; Boston, MA.
15. Laessig, R.H., Ehrmeyer, S.S. "Complying with Regulations and Passing Inspections: Successful Strategies and Practical Game Plans." American Society for Clinical Pathology Regional Meeting, April 1999; Boston, MA.

16. McDonald, R.A., Pfister, J.R., Shult, P. "Comparison of the Performance of PCR, LCR, EIA and EIA with Supplemental Testing for Detection of *Chlamydia trachomatis* Infections in Women Attending Family Planning Clinics in Wisconsin." Poster presented at the 99th General Meeting of the American Society for Microbiology, May 30-June 3, 1999; Chicago, IL.

17. Manchester, J., Sonzogni, W. "Polybrominated diphenyl ethers³/₄ a new contaminant of concern." Paper presented at the Joint Meeting of the American Water Resources Association (Wisconsin Section) and the Society of Environmental Toxicology and Chemistry (Midwest Chapter), March 26, 1999; LaCrosse, WI.

18. Olszewski, J.R., Johnson, J.A., Panella, J.M., Davis, T.S., Oxendine, K.M., Kozitske, E.L., Love, C.J., Bourdeau-Heller, J., Meisner, L.F. "Processing for Success: POC Cultures are Not Affected by Delayed Transit." 24th Annual Meeting of the Association of Genetic Technologists, June 17-20, 1999; Orlando, FL.

19. Shin, G., Newland, S., Battigelli, D.A., Sobsey, M.D. "Reduction of Norwalk Virus and Model Human Enteric Viruses by Coagulation, Flocculation and Sedimentation." 99th Annual Conference of the American Society for Microbiology, June 1, 1999; Chicago, IL.

20. Sobsey, M.D., Shin, G., Battigelli, D.A., Newland, S. "Reduction of Norwalk Virus by Drinking Water Treatment Processes." Accepted for presentation at the 1999 International Workshop on Human Caliciviruses, March 29-31, 1999; Atlanta, GA.

21. Sonzogni, W.C., Stanton, N. "Lead testing in Wisconsin." Paper presented on behalf of the University of Wisconsin's Sesquicentennial Celebration to the Medical Society of Milwaukee County, February 15, 1999; Milwaukee, WI.

22. Swain, G.R., Conners, L.R., Pfister, J.R., Gradus, M.S. "Presence of Vaginitis as a Predictor of *Chlamydia trachomatis* or gonococcal cervicitis in Women Attending a Sexually Transmitted Disease Clinic." Paper presented at the Annual Research Forum of the Medical College of Wisconsin, Department of Community and Family Medicine, June 7, 1999; Milwaukee, WI.

V. Other Presentations

Note: Last number in citation indicates number of participants

1998

1. Battigelli, D.A. "Viruses in drinking water." Guest lecturer at the annual meeting of the Wisconsin Laboratory Association. September 1998; 35.

2. Battigelli, D.A., Standridge, D.H. "Detection of Viruses in Wisconsin Groundwaters." Guest lecturer at the annual meeting of the Wisconsin Department of Natural Resources. October 15, 1998; Manitowoc, WI; 75.

3. Kubista, L., Markwardt-Elmer, P., Wand, P. "Update on STD, HIV and TB Testing." Wisconsin AIDS/HIV Program Conference. September 29, 1998; Middleton, WI; 100.
4. Kurtycz, D.F.I., Shalkham, J.E., Hoerl, H.D. "Monolayer Preparations in Gynecologic Cytology." American Society of Clinical Pathologists Meeting. October 17, 1998; Washington, D.C.
5. Mager, A. "Source and Occurrence of Pathogens in Watersheds." Wisconsin Laboratory Association³/₄ Annual Meeting. September 9, 1998; Waukesha, WI; 60.
6. Mager, A. "Source and Occurrence of Pathogens in Watersheds." DNR Bureau of Water and Groundwater. October 15, 1998; Manitowoc, WI; 150.
7. Olstadt, J. "A Study of the Seasonal Occurrence of Total Coliform Positivity in Drinking Water." DNR Bureau of Water and Groundwater. October 15, 1998; Manitowoc, WI; 150.
8. Olstadt, J. "A Study of the Seasonal Occurrence of Total Coliform Positivity in Drinking Water." DNR Research Seminar. December 10, 1998; Madison, WI.
9. Pfister, J.R. "Evaluation of Laboratory Test Performance: Sensitivity, Specificity and Predictive Value." Issues in Rapid Kit Testing for Influenza and RSV—a Wisconsin State Laboratory of Hygiene Seminar. October 12, 1998; Pewaukee, WI.
10. Pfister, J.R. "Overview of Public Health." State Laboratory of Hygiene and Madison Area Technical College, Medical Laboratory Technologist Program. August 17, 1998 and January 4, 1999; Madison, WI.
11. Pfister, J.R. "Overview of Public Health" Medical Technologist Program, University of Wisconsin-Madison. February 25, 1998; Madison, WI.
12. Romero, J., Kirk, C., Dunn, J., Price, C., Oberste, S., Schnurr, D. "Molecular and Phenotypic Characterization of a Myocarditic Coxsackievirus B3 (CVB3) Isolate." Poster Presented at the Infectious Diseases Society of America Annual Meeting. August 1998; Denver, CO.
13. Shalkham, J.E. "Pap Smear Quality³/₄ Planned Parenthood of Wisconsin Data." Planned Parenthood Meeting. April 23, 1998; Milwaukee, WI.
14. Shalkham, J.E. "ThinPrep GYN Cytomorphology." Alabama Society of Cytology. May 30, 1998; Birmingham, AL.
15. Shalkham, J.E. "Quality Assurance Programs in Cytology Laboratories." Alabama Society of Cytology. May 30, 1998; Birmingham, AL.

16. Shalkham, J.E. "ThinPrep GYN Cytomorphology." Dane County Cytology Center. October 24, 1998; Madison, WI.
17. Shult, P. "Influenza-Community Surveillance" and "Reemerging Infectious Diseases" (2 lectures). Vilnius University Faculty. July 10, 1998; Vilnius, Lithuania; 35.
18. Shult, P. "Influenza and Respiratory Viruses in the Community." Riverside Clinic Staff Continuing Education Seminar. September 4, 1998; Waupaca, WI; 20.
19. Shult, P. "Respiratory Virus Surveillance, Specimen Collection and Testing." Family Practice Clinics throughout Wisconsin. 10 presentations during Autumn-Winter 1998-99; from 10-25 attendees at each.
20. Shult, P., Kurth, B. "Influenza- Specimen Collection, Testing and Reporting." West Bend Nursing Home. October 20, 1998; West Bend, WI; 15.
21. Shult, P. "Influenza Update for 1998-99." Sauk Prairie Hospital and Prairie Clinic. October 27, 1998; Sauk Prairie, WI; 35.
22. Shult, P. "Rapid Viral Laboratory Diagnosis." NE Technical College. November 5, 1998; Green Bay, WI; 45.
23. Shult, P. "Influenza Update." Fox Valley Medical Technology Association. November 5, 1998; Appleton, WI; 10.
24. Shult, P. "Influenza Update for 1998-99." Appleton Family Medicine Clinic. November 10, 1998; Appleton, WI; 15.
25. Shult, P. "Emerging Infectious Diseases and the Rise of Western Civilization." Middleton High School History and Biotech students. November 13, 1998; Middleton, WI; 50.
26. Sjolander, S., Hintzman, P. "Making the Point Turn." September 30, 1998; Wausau, WI; 100.
27. Sonzogni, W.C. "Exploring Wisconsin Streams." Optimists Club. June 30, 1998; Madison, WI.
28. Standridge, J. "Seasonal Occurrence of Total Coliform Bacteria in Wisconsin." Wisconsin Laboratory Association³/₄ Annual Meeting. September 10, 1998; Waukesha, WI; 60.
29. Standridge, J. "Expert Panel on Current Issues in Food and Water Safety." Wisconsin Laboratory Association³/₄ Annual Meeting. September 10, 1998; Waukesha, WI; 60.

30. Standridge, J. "Current Research Projects at the WSLH." Annual meeting of the American Water Works Association¾ Wisconsin Section. September 23, 1998; Madison, WI; 90.

31. Standridge, J. "The Midwest Experience With the Safe Drinking Water Act." Annual Meeting of the Association of Safe Drinking Water Administrators. October 7, 1998; Keystone, CO; 250.

32. Standridge, J. "Current Water Microbiology Research Projects." DNR Bureau of Water and Groundwater. October 15, 1998; Manitowoc, WI; 150.

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33. Battigelli, D.A. "Detection of Emerging Pathogens by Gene Probing." Lecture for the annual meeting of the American Water Works Association¾ Wisconsin Chapter. September 1999; Oshkosh, WI; 100.

34. Harris, Barbara J. "Progress Assessments¾ the WSLH Model." April 6, 1999; Madison, WI; 50.

35. Hoffman, G. "Galactosemia Testing." May 14, 1999; Madison, WI; 25.

36. Hoffman, G. "Cystic Fibrosis Meeting." May 5, 1999; Chicago, IL; 6.

37. Kirk, C., Jirsa, S., Brandriet, J., Shult, P., Loeffelholz, M., Hunt, J., LaFlash, J., Volk, R., Habedank, T., Christenson, L. "Influenza A: A Comparison of 1996-97 and 1997-98 Growth Patterns." Poster Presented at the Clinical Virology Symposium. May 1999; Clearwater, FL.

38. Kirk, C., Proctor, M., Haupt, T., Shult, P., Reisdorf, E. "1998 Wisconsin Calicivirus Outbreaks." Poster Presented at the Wisconsin Public Health Association Meeting. June 1999; Appleton, WI.

39. Krchnavek, K., Markwardt-Elmer, P., Wand, P. "The Future of HIV Testing." Nursing's Response to HIV/AIDS: Update 1999 (conference). April 20, 1999; Oconomowoc, WI; 30.

40. Kurtycz, D.F.I., Shalkham, J.E., Hoerl, H.D. "Monolayer Preparations in Gynecologic Cytology," American Society of Clinical Pathologists Meeting. April 13, 1999; Orlando, FL.

41. Mager, A. "Source and Occurrence of Pathogens in Watersheds." City of Milwaukee Health Department Seminar. February 18, 1999; Milwaukee, WI; 15.

42. Mager, A. "Source and Occurrence of Pathogens in Watersheds." DNR Research Seminar. January 7, 1999; Madison, WI; 15.
43. Mathew, J. "Chemical Emergencies and Public Health." Tenth Environmental Health Symposium: Biological Terrorism. April 30, 1999; Eau Claire, WI.
44. Meisner, L. "Use of Fluorescent In Situ Hybridization (FISH) in Identification of Genetic Changes in Cancer with Emphasis on the Role of HER-2/neu in Breast Tumors." United Health Laboratories. May 12, 1999; Appleton Memorial Hospital.
45. Pfister, J.R. "Prevalence and Risk Indicators of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* Infections Among Wisconsin Correctional System Inmates." Wisconsin Department of Corrections, Health Services Managers Meeting. March 3, 1999; Madison, WI.
46. Pfister, J.R. "The Use and Interpretation of Diagnostic and Screening Tests in the Public Health Laboratory." University of Wisconsin-Madison Medical Technology Program. April 12, 1999.
47. Pfister, J.R. "Laboratory Tests for STD: How Good are the Tests and What do the Results Really Mean?" STD Update. Health Care Education and Training, Inc. May 20, 1999; Madison, WI; 35.
48. Reisdorf, E., Proctor, M., Haupt, T., Drewieck, K., Kirk, C., Shult, P. "Calicivirus Testing in Wisconsin." Poster Presented at the International Conference on Caliciviruses. April 1999; Atlanta, GA.
49. Shalkham J.E. "Future of Cytology, Impact of Automation." Wisconsin Histology Society. April 8, 1999; Madison, WI.
50. Shult, P. "Influenza Update and Pandemic Planning." St. Michael's Hospital and regional clinic staff. February 10, 1999; Stevens Point, WI; 30.
51. Shult, P. "Emerging Infectious Diseases and Careers in Laboratory Science." Middleton High School Biotech students. March 12, 1999; Middleton, WI; 15.
52. Sjolander, S., Hintzman, P. "Turning Point: Taking Action to Transform the Health of the Public." June 4, 1999; Appleton, WI; 30.
53. Sonzogni, W.C. "Analyzing Wisconsin Groundwater." Groundwater Protection and Awareness Week Capitol Rotunda Presentation. February 2, 1999; Madison, WI.

54. Standridge, J. "Water Microbiology for Well Drillers and Pump Installers." February 5, 1999¾ Middleton, WI; February 15, 1999¾ Hayward, WI; February 16, 1999¾ Stevens Point, WI; February 16, 1999¾ Milwaukee, WI; March 15, 1999¾ Eau Claire, WI; March 16, 1999¾ Rhinelander, WI; March 17, 1999¾ Green Bay, WI; and March 18, 1999¾ Wisconsin Dells, WI; 2500

55. Standridge, J. "Bioaerosols as a Source for Coliform Contamination of Water Wells." Wisconsin Environmental Health Association Annual Meeting. May 19, 1999; Wisconsin Dells, WI; 75.

56. Watkins, T. "Urine Sediment Review." January 28, 1999; Milwaukee, WI; 40.

VI. Programs, Workshops, And Courses Presented by WSLH

1998

1. Kirk, C., Shult, P., Pfister, J., Drewieck, K., Temte, J., Mueller, D. "Catch the Flu Before It Catches You: Issues in Rapid Kit Testing for Influenza and RSV." October 12, 1998; Pewaukee, WI.

2. Kubista, L., Shult, P., Rodgers, A. "Tuberculosis in Wisconsin: Building an Effective Laboratory Network." October 29, 1998; Madison, WI.

3. Wisconsin Occupational Health Laboratory Staff. NIOSH 582 Equivalent Asbestos Training Course, Summer 1998; 2.

1999

4. Battigelli, D.A. "Gastroenteritis Viruses" session in the *Virology Methods for Public Health Laboratories* workshop sponsored by the National Laboratory Training Network. July 26-30, 1999; Madison, WI.

5. Kirk, C., Shult, P., Virology Laboratory Staff. "Wisconsin Virology Conference." June 23, 1999; Madison, WI.

6. Shult, P. and Pfister, J.R. "Bioterrorism: The Role of the Laboratory." Presented to quarterly meeting of Wisconsin HAZMAT coordinators. June 26, 1999; Oshkosh, WI.

VII. Programs, Workshops, and Courses where WSLH was a Co-Sponsor

1998

1. Hill, B., Mabis, T. "The Power of One." WSLH/Ortho Vitros Users Seminar. October 22, 1998; Pewaukee, WI.
2. Kirk, C., Shult, P. "Midwest Public Health Laboratories Virology Roundtable Teleconference Series." (Collaboration with National Laboratory Training Network) Ongoing through the year, 1998-1999.

1999

1. Bowman, G., Mealy, R. "QA/QC for Wastewater Laboratory Testing." Wisconsin Rural Water Association Training Seminar. March 2, 4, 11, 1999; April 15, 20, 28, 1999; various sites around Wisconsin.
2. Burmeister, B., Hassemer, D. "25 Years and Into the New Millenium." WSLH/Dade Behring Users Seminar. April 15, 1999; Pewaukee, WI.
3. Kirk, C.J., Rauch, M., Battigelli, D.A. "Detection of Viruses in the Aquatic Environment" session in the Communicable Diseases Education Module of the University of Wisconsin Medical Technology academic laboratory rotation, April 1999.
4. Shult, P., Pfister, J.R., Mathew, J. "Biological Terrorism: An Environmental and Public Health Perspective." Tenth Environmental Health Symposium. April 30, 1999; Eau Claire, WI.

VIII. University Courses Taught or Lectures Presented:

Note: Last number in citation indicates number of participants

1998

1. Dube, D., Sonzogni, W.C. "Water Analysis Intermediate Laboratory." UW Civil and Environmental Engineering Course #503. Fall Semester 1998; 16 students.
2. Hamacher, M., Monson, T. "Infection and Immunity 701-Laboratory section." UW Medical School Course for 2nd year Medical Students. Fall 1998; 28.
3. Hamacher, M. "Vibrio Cholerae and other Vibrios." UW Preventive Medicine Course #603: Public Health and Clinical Microbiology. 1998-1999.

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4. Kurzynski, T.A. "Pertussis and Diphtheria," "Antibiotics," and "Anaerobic Bacteria." UW Preventive Medicine Course #603: Public Health and Clinical Microbiology. 1998.
5. Kurzynski, T.A., "Special Topics: DNA Boot Camp-a Laboratory for Undergraduates." Lecture/Presentation on PFGE for students in UW Course #677. 1998.
6. Laessig, R.H. "Role of Proficiency Testing in Clinical Chemistry." UW Medical Technology Course #521. Fall Semester 1998; 20 students.
7. Pfister J.R. "Public Health Informatics." UW Industrial Engineering Course #691: Special Topics in Industrial Engineering: Health Information Systems. December 14, 1998; 6.
8. Sonzogni, W.C. "Water Analysis Intermediate." UW Civil and Environmental Engineering Course #501. Fall Semester 1998; 19 students.

1999

9. Laessig, R.H. "Manufacturers' Approaches to Enzyme Calibration." UW Medical Technology Course #522. Spring Semester 1998; 20 students.
10. Meisner, L.F. "Cancer Cytogenetics." UW Genetics Course# 677. February 11, 1999.
11. Shult, P. "Emerging Infectious Diseases." UW Medical Technology. February 25, 1999; 15.

<p>IX. Other Teaching or Lectures that Were Part of a "For-credit" Class Note: Last number in citation indicates number of participants</p>

1998

1. Bacteriology Lab Staff. UW-LaCrosse Graduate Students, 1998-99.
2. Bacteriology Lab Staff. MATC MLT Program, 1998-99.
3. Bacteriology Lab Staff. UW-Madison Med-Tech Program, 1998-99.
4. Bacteriology Lab Staff. UW Hospital Pathology Residents, 1998-99.
5. Battigelli, D.A. "The Polymerase Chain Reaction." Environmental Engineering Seminar, Spring 1998; 25.
6. Battigelli, D.A. "Viruses in the Environment." Preventive Medicine spring semester seminar. Spring 1998; 15.

7. Battigelli, D.A. "Water Treatment and Viral Contaminants." Solar Engineering Laboratory seminar. January 1998; 11.
8. Chen, Mei-Hao. "UW-Madison Teacher Enhancement Program: HIV." July 14, 1998; 2.
9. Communicable Diseases Division, UW Medical Microbiology Students, Rotation through the Division. July 1998.
10. Communicable Diseases Division, UW Medical Technologists, Rotation through the Division. November 1998; 3.
11. Newborn Screening Staff. UW Medical Technology Student Rotations. October 12-16, 1998, 1; October 26-30, 1998, 1; November 16-20, 1998, 1; November 30-December 4, 1998, 1.
12. Newborn Screening Staff. Pediatric Resident Rotation. July 14, 1998, 1; August 18, 1999, 1; September 1, 1998, 1; October 6, 1998, 1; October 27, 1998, 1; November 17, 1998, 1; December 15, 1998, 1.
13. Newborn Screening Staff. MATC MLT Program. 1998-99.
14. Shult, P. and WSLH staff. "Reemerging Infectious Diseases." MATC students. August 18 and 19, 1998 (2 lectures total); 30.
15. Watkins, T. "Urine Sediment Review." Urinalysis 310. July 8, 1998; 27.
16. Standridge, J. "Water microbiology lecture and lab." Civil and Environmental Engineering 503-Advanced Water Chemistry. October 20-21, 1998; 16.

1999

17. Battigelli, D.A. "Application of Innovative Biotechnologies for the Detection of Viruses in the Aquatic Environment." Bacteriology 545 – Topics in Environmental Biotechnology; March 1999; 40.
18. Chen, Mai-Hao Chen. "HIV." MATC students. January 6, 1999; 6.
19. Communicable Disease Division, Staff. UW-LaCrosse Graduate Student: Division Rotation. April 1999; 1.
20. Communicable Disease Division, Staff. UW-Madison Medical Technology Students: Division Rotation. 1999.
21. Communicable Disease Division, Staff. UW-Madison Pathology Residents: Division Rotation. 1999.

22. Communicable Disease Division, UW Medical Technologists and UW-LaCrosse graduate students. Division Rotation. April 1999; 5.
23. Newborn Screening Staff. Pediatric Resident Rotation. February 9, 1999, 1; March 9, 1999, 1; April 13, 1999, 1; April 26, 1999, 1; May 18, 1999, 1; June 15, 1999, 1.
24. Shult, P. "Reemerging Infectious Diseases." MATC students. January 5, 1999; 10.

X. Other Teaching or Training We Provided NOT as a Part of a "For-credit" class
Note: Last number in citation indicates number of participants

1998

1. Kirk, C., Shult, P., Virology Laboratory Staff. Bench Training for Laboratorian from Lithuania. August 25, 1998; August 28, 1998; 1.
2. Kirk, C., Shult, P., Virology Laboratory Staff. Bench Training for two Laboratorians from Illinois Department of Public Health Laboratory. September 15–September 18, 1998; 2.
3. Markwardt-Elmer, P. "HIV Screening and Confirmatory Tests." Counseling and Testing Site, New Counselor Training. November 10, 1998; Appleton, WI: 26.
4. Sonzogni, W.C., Battigelli, D. "Current Environmental Health Issues." Presentation given to the Laboratory Medicine Conference, University of Wisconsin Hospital and Clinics, November 5, 1998; 30.
5. Temte, J., Shult, P. "Influenza and Respiratory Viruses in the Community." UW- Madison Family Medicine Resident's Seminar. October 15, 1998; 15.
6. Webb, M., Prieve, A. "Team Skills." UW Medical Technology Class. 3 hour workshop. July 16, 1998.

1999

7. Markwardt-Elmer, P. "HIV Screening and Confirmatory Tests." Counseling and Testing Site, New Counselor Training. April 12, 1999; Oconomowoc, WI; 25.
8. Meisner, L. "Chromosomes and Karyotypes; Teacher Enhancement in Biology." Human Genetics class. June 23, 1999, Madison, WI.
9. Shult, P. "Gastrointestinal Infections: A Community Perspective." Wingra Family Medicine Clinic continuing education seminar. June 8, 1999; 10.

10. Sonzogni, W.C., Inhorn, S. "An Overview of the State Laboratory of Hygiene." Presentation given to the Technical Club of Madison, March 10, 1999; 35.

XI. Any Other Research or Outreach NOT Included Elsewhere
Note: Last number in citation indicates number of participants

1998

1. Communicable Diseases Division. Madison Area Technical College rotation through the Division. August 1998; 6.
2. Webb, M. Tour for Vietnamese Delegation, Public Health and Ministry Officials. October 21, 1998; 7.
3. Webb, M. Tour for West High School Medical Education group. December 18, 1998; 5.

1999

4. Battigelli, D.A. Workshop on fecal indicators for ground water sampling under the ground-water rule, United States Environmental Protection Agency. February 1999; 43.
5. Communicable Diseases Division, Madison Area Technical College rotation through the Division. January 1999;7.
6. Kirk, C., Shult, P. Midwest Public Health Virology Teleconferences. (Bi-monthly series). Number of people and laboratory sites participating varies.
7. Webb, M. Tour for Grant County Family Planning. January 14, 1999; 6.
8. Webb, M. Tour for Wisconsin State Student Medical Technology group. April 17, 1999; 20.

XII. Extramurally Funded Research

1. "Modeling Virus Transport in the Subsurface of the Maryland Eastern Shore." 1999, United States Geological Survey. \$64,000. Primary Investigator: David A. Battigelli.
2. "Virus Occurrence in Wisconsin Public Water Supplies Using Groundwater as a Source." 1997-1999, Wisconsin Dept. Natural Resources. \$200,000. Primary Investigator: David A. Battigelli.

3. "Determining the Occurrence of Viruses in Minnesota Groundwaters" 1998-1999, Minnesota Department of Health. \$92,500. Primary Investigator: David A. Battigelli.
4. "Preparation and Distribution of Enumerated Protozoa Spiking Suspensions." 1999-2000, DynCorp Sample Control Center. \$88,536. Administrative Supervisor: David A. Battigelli.
5. "Cryptosporidium Criteria Document Addendum." 1998, United States Environmental Protection Agency. \$23,410. Co-Investigator: David A. Battigelli.
6. "Viral Contamination of Household Wells Near Disposal Sites for Human Excreta." 1998-1999, Groundwater Coordinating Council. \$98,265. Co-Investigator: David A. Battigelli.
7. "Removal Efficiencies of Emerging Waterborne Pathogens." 1997-2000, American Water Works Association Research Foundation. \$250,000. Co-Investigator: David A. Battigelli.
8. "Assessment of Laboratory Performance and Practices for Direct Detection of *M.tuberculosis* Nucleic Acids." 1998-2000, Centers for Disease Control and Prevention. \$300,000. Co-investigators: David Hassemer and Pete Shult.
9. "Natural Attenuation of Fuel and Related Groundwater Contaminants- A Measurement Method." 1998-1999, University of Wisconsin System Groundwater Research Program. \$12,0000. Principal Investigator: W.C. Sonzogni.
10. "On-line SFE/GC for Improved Detection of Trace Organic Pollutants in Groundwater Monitoring." 1998-1999, University of Wisconsin System Groundwater Research Program. \$22,000. Co-Investigator: W.C. Sonzogni.
11. "Air-Borne Coliform Contamination of Wells." 1998-1999, Wisconsin Department of Natural Resources. \$19,000. Co-Investigators: S. Kluender, J. Standridge and W. Sonzogni.
12. "Regional Variation of Breast Cancer Rates in Wisconsin." 1998-, National Cancer Institute. \$1,536,000. Co-Investigator: W. Sonzogni. (Principal Investigator: Dr. Patrick Remington).
13. "Development of Translators for Filterable Metals Based Upon Watershed Characteristics." 1999-2001, U.S. Geological Survey and National Institutes for Water Resources. \$100,0000. Co-Investigator: W. Sonzogni.
14. "Sources of Cryptosporidium in Watersheds." 1999-2001, Water Environment Research Foundation. \$200,000. Principal Investigator: Jon Standridge.

XIII. Committees, Work Groups, Boards Outside University of Wisconsin-Madison

1. Burk, T. American Industrial Hygiene Association (Wisconsin Section) Executive Committee.
2. Burmeister, B. NELAC Technical Advisory Group, Wisconsin Department of Natural Resources.
3. Burmeister, B. National Environmental Laboratory Accreditation Conference (NELAC), Proficiency Testing Standing Committee, member and chair-elect.
4. Hassemer, D. Cholesterol Reference Method Laboratory Network, Director of Participating Laboratory (U.S.)
5. Hassemer, D. Wisconsin Department of Agriculture, Trade, and Consumer Protection, Member Laboratory Certification Workgroup.
6. Hintzman, P. Wisconsin Division of Public Health Tuberculosis Program Strategic Planning Team
7. Hintzman, P. Wisconsin Department of Health and Family Services Turning Point Initiative
8. Hintzman, P. Wisconsin Public Health Association Board.
9. Pfister, J.R. Region V Infertility Prevention Program Advisory Committee, Executive Committee, Laboratory Subcommittee (Chair), and Wisconsin State Alliance, 1994-Present. Regional data manager and epidemiologist, 1996-Present. Health Care Education and Training, Inc. and Centers for Disease Control and Prevention, Region V Infertility Prevention Project.
10. Pfister, J.R. National *Chlamydia* Laboratory Committee, Association of Public Health Laboratories, 1996-Present.
11. Pfister, J.R. Board of Trustees, Dodge-Jefferson Healthier Community Partnership, 1996-Present.
12. Pfister, J.R. HIV Counseling and Testing Site Workgroup, Wisconsin Division of Public Health, 1997-Present.
13. Pfister, J.R. Annual Meeting Planning Committee, Poster Session Subcommittee, Wisconsin Public Health Association, 1997-Present.

14. Pfister, J.R. Data Expert Advisory Workgroup, and Community Response Team, Wisconsin Division of Public Health; Wisconsin's Turning Point, 1998-Present.
15. Popp, D. American Industrial Hygiene Association, Environmental Lead Laboratory Accreditation Committee.
16. Schneider, J. Health Communications Group Steering Committee, American Public Health Association, 1997-present.
17. Schneider, J. Public Relations Committee, Wisconsin Public Health Association, 1997-present.
18. Sonzogni, W. Wisconsin Laboratory Certification Council.
19. Sonzogni, W. Toluene/Xylene Technical Advisory Committee, Wisconsin Department of Natural Resources Board.
20. Sonzogni, W. Chloride Technical Advisory Committee, Wisconsin Department of Natural Resources.
21. Sonzogni, W. Water Body Use Designation Advisory Committee, Wisconsin Department of Natural Resources.
22. Sonzogni, W. American Water Works Association (Wisconsin Section) Research Committee.
23. Sonzogni, W. Associate Editor, *Journal of Great Lakes Research*.
24. Wand, P. Tuberculosis Program Strategic Planning Team, Wisconsin Division of Public Health.
25. Kennedy-Parker, D. National Environmental Laboratory Accreditation Conference Technical Advisory Committee, Wisconsin Department of Natural Resources. February 1998-July 1998.

