

Innovations in Quality Public Health Laboratory Practice

Laboratory System Improvement Program Strategic Plan Implementation

Steve Gradus, Ph.D., Laboratory Director
Sanjib Bhattacharyya, Ph.D., Deputy Laboratory Director

<http://city.milwaukee.gov/LSIP>

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I. INTRODUCTION

Synopsis of LSIP History (2010-2011):

An assessment of the Local Public Health Laboratory (LPHL) system in Milwaukee was conducted by 75 stakeholders in November 2010. Milwaukee was the first laboratory system in the nation to conduct LSIP at the local (versus state) level and significant effort was invested in adapting the program for local-level use. Following the assessment, the Milwaukee Laboratory Advisory Committee was convened in 2011 to review the assessment results and to identify system improvement priorities. Research and workforce development were identified as priority areas for process improvement to support the MHD in its mission to become an academic health department. Based on this prioritization, subcommittees comprising subject matter experts were convened to engage in strategic planning and action planning. Over the past six months, LSIP has continued to engage multi-disciplinary LPHL system stakeholders to begin implementation and improvement of the LPHL system. A detailed report of progress made through July 2012 follows.

The Research question addressed in the grant was: “What does an ideal PHL system look like?” More specifically, through an advisory committee and subcommittee process we have focused on two specific questions: “What innovative and substantial actions can we take to enhance research activities and strengthen workforce development within the Local Public Health laboratory System (LPHL System)?”

LSIP stakeholders have continued to enthusiastically participate and offer encouragement and support for the LSIP processes over the last two years. LSIP and the local public health department are clearly filling a community need to lead cross-disciplinary research and workforce development initiatives with a host of community stakeholders. Our innovative and significant actions have therefore enhanced the laboratory system as we attempt to approach our stated research question of this project, “What does the the ideal PHL system look like?”

A. General Program Update

1. *Co-chair Structure.*

Community co-chairs were secured in late 2011 to assure LPHL system organizational and stakeholder ownership and commitment to the project. Dr.’s Steve Gradus and Sanjib Bhattacharyya were joined by Dr. David Petering, Director of the Children’s Environmental Health Sciences Core Center at University of Wisconsin-Milwaukee (UWM), Dr. Dara Frank, Professor of Microbiology and Molecular Genetics and Director of Center for Infectious Disease Research at the Medical College of Wisconsin (MCW), Dr. Gul Afshan, Professor and Program Director of BioMolecular Engineering at the Milwaukee School of Engineering (MSOE), and Dr. Randall Lambrecht, Vice President of Research and Academic Relations at Aurora Health Care, as co-chairs of the three subcommittees

The co-chairs met three times in 2012 to provide coordinated leadership for LSIP and the work of the three subcommittees that identified the following three strategies for implementation:

(1) Facilitating cross institutional multidisciplinary research;

- (2) Promoting the LPHL system to attract a competent workforce; and
- (3) Strengthening of internships.

The important planning step for the Innovations Grant was to convene the four community co-chairs and MHD Laboratory leadership to discuss the Innovations Grant and implementation of the strategic plans developed in 2011. We are grateful to have secured the commitment of four Local Public Health Laboratory System leaders that are well respected in the community.

Community co-chair meeting May 8, 2012



Dr. Steve Gradus, City of Milwaukee Health Department, Laboratory
Dr. David Petering, Chemistry Dept., UW Milwaukee
Dr. Gul Afshan, BioMolecular Engineering, Milwaukee School of Engineering
Dr. Randall Lambrecht, Vice President, Aurora Health Care
Dr. Dara Frank, Microbiology Department, Medical College of Wisconsin
Dr. Sanjib Bhattacharyya, City of Milwaukee Health Department, Laboratory

2. *Research*

In June of 2012, 19 laboratory-related researchers from multiple organizations with diverse interests were convened to begin development of a research inventory as the basis for cross-institutional, multi-disciplinary research. Researchers shared their current areas of research, research interests and capacities (e.g. instrumentation, methodology, specimen repositories, human resources, etc.) to facilitate collaborative research. The outcome of this meeting was a research inventory that will continue to grow. The goal is to make the research inventory available on-line in a searchable format and to continue to convene researchers to identify and support collaborative projects. In addition to committee meetings, community co-chairs arranged several one-on-one meetings with key community research leaders to better understand community research networks already in place and how each could complement and build off one another's strengths with LSIP.

3. *Workforce Development: Internships*

Two meetings were held in May with the co-chair, Dr. Lambrecht, to define the direction of this initiative. Wisconsin Clinical Laboratory Science Workforce Survey 2010 data was reviewed with Nancy McKenney, Director of Workforce Development and Public Health Workforce Development Project Coordinator for the Wisconsin Department of Health Services (DHS) to inform next steps. The data revealed workforce vacancies for Certified Medical Laboratory Technicians. Preliminary information is being collected from local microbiology laboratories to augment this information to assure relevance of local

efforts. DHS follow-up to the 2010 Survey will specifically collect information on internship capacity and will further analyze the current workforce by age in support of LSIP efforts.

As we move forward, we plan to convene a subcommittee of representatives of academic programs and employers (public and private laboratories) to look at the workforce survey data and discuss factors such as how to assess the capacity of academic/training programs for MLTs and MTs, the number of students in the pipeline, internship capacity, graduation rates and employment outcomes, ultimately determining how to get more students into programs with meaningful internships.

4. *Workforce Development: Promotion of the Local Public Health Laboratory (LPHL) System*

The LPHL Workforce Development Promotion Subcommittee was held in April, producing a list of various ways to promote the LPHL system to attract and assure a competent workforce. Three of these ideas - a laboratory career conference, a laboratory career website and a LPHL system promotional campaign - are in the process of being integrated into the HWPP grant application for funding. LSIP-related “stories” have been collected to promote lab careers and local LSIP as well.

5. *Additional*

AHEC Intern: An Milwaukee Area Health Education Center (AHEC) intern assisted in most phases of LSIP activities in June and July, that included committee meetings, researching and planning for a Career Day for the grant proposal, interviewing three staff to obtain stories, presented an LSIP seminar to 33 interns and their mentors, and assisted the LSIP consultant in researching and writing a grant proposal to continue LSIP.

Proposal from PR Firm: Mueller Communications, Inc. provided a proposal for media and partnership strategies to promote LSIP and lab careers, composed of five independent proposals for promoting lab science careers among 16- to 21-year-olds for the HWPP grant proposal.

Incidental Strengthening of Stakeholder Partnerships and LSIP: As a result of numerous stakeholder meetings and discussions several collaborations, and grant opportunities and opportunities to promote LSIP and public health have occurred unrelated to specific milestones or objectives. (see Appendix).

Healthier Wisconsin Partnership Program (HWPP): A Letter of Intent (LOI) was submitted to the Medical College of Wisconsin HWPP to continue support of the of LSIP strategic plans. Co-chair and MCW faculty Dr. Dara Frank served as the academic partner required from the Medical College of Wisconsin. The HWPP’s vision is to improve the health of the people of Wisconsin by supporting community-academic partnerships that address public and community health improvement. HWPP “supports

projects that define public health inclusively, focusing on broad determinants of health in communities.” LSIP was one of eight impact proposals, of 15 submitted, that was approved to submit a full application due in July 2012. Awardees will be notified in November. The ability to actualize many of the community activities identified by stakeholders during the APHL Innovations Grant will depend on future funding such as the HWPP grant application.

II. MILESTONES

A. Research Milestone Objectives

1. *Expand & convene research subcommittee*
2. *Identify themes & objectives*
3. *Inventory of researchers, their research agendas and resources*

It was important to work with community co-chairs and their knowledge and community contacts to develop an understanding of ongoing research and research networks prior to assembling the research subcommittee. The research co-chairs, who have been proponents and participants in the LSIP process since 2010 and involved in other research networks, were able to open new avenues of partnerships that otherwise would have been difficult to forge. Three key meetings of additional network leaders that are now working to link with LSIP are:

1. The NIEH-funded Children’s Environmental Health Sciences Core Center (CEHSCC). MHDL staff have attended CEHSCC meetings, provided a keynote on LSIP and Public Health and presented a poster at an all-investigator meeting held twice annually. Dr. Petering and his staff met with MHDL to discuss LSIP and joint efforts on May 1, 2012.
2. The CTSI Community Engagement Key Function is to engage communities as scientific citizens by increasing scientific literacy, engage CTSI investigators as citizen scientists by improving community engagement strategies and skills, and expand community-based research networks. Dr. Syed Ahmed and his staff met with LSIP co-chairs to discuss partnering together on June 11, 2012.
3. The Medical College of Wisconsin’s Clinical Translational Sciences Institute (CTSI), CTSI Director, Dr. Reza Shaker, met with Drs. Frank, Gradus and Bhattacharyya to explore linkages with LSIP and invite public health to join CTSI on July 20, 2012.

Based on previous committee contacts a revised research committee of diverse community stakeholders met on June 22, 2012, to assess and inventory research interests, capabilities, themes, possible collaborations, and how best to facilitate lab system research. There were 19 professionals from different research organizations around the city with diverse research interests. At the meeting we reviewed the importance of LSIP along with the goals of the project. Participants filled out a survey

about their research capabilities and interests. These were then put into a growing inventory of research in the Milwaukee area that will help connect researchers by allowing them to see larger themes of research in the area and providing them with contact information. Research was categorized by research themes and will be disseminated to this group and posted on the MHD LSIP website and used as a basis for additional growth and future planning. As a result of this meeting, nine researchers identified 15 new potential collaborations of interest that would complement their ongoing work.

Discussions have been initiated to link the above research databases from the various networks.

6/22/12 committee findings: Current Research & Research Interests Subcategories		
CURRENT RESEARCH	RESEARCH INTERESTS	RESOURCES
<ul style="list-style-type: none"> • Methods <ul style="list-style-type: none"> ○ Chemical ○ Biological/Microbial ○ Engineering • Biological Systems • Modeling • Surveillance 	<ul style="list-style-type: none"> • Linking to other disciplines (outreach) • Microbiology • Contaminants • Toxicology & Immunology • Methods • Surveillance 	<ul style="list-style-type: none"> • Models/Centers of Excellence • Databases • Specimen/Sample Repositories • Instrumentation • Students/Interns & Staff

Diverse Community Research Subcommittee Inventories - Activities, Interests and Resources: June 22, 2012.



B. Workforce Development - Internship Milestone Objectives

- 1. Identification of co-chair**
- 2. Revised (expanded) subcommittee member list. Two subcommittee meetings.**
- 3. Outline scope**
- 4. Development of assessment tool/survey**
- 5. List of organizations and individuals to survey**

Drs. Randy Lambrecht (Internships) and Gul Afshan (Promotion of the LPHL system) have agreed to serve as co-chairs for workforce development.

An assessment centered on laboratory-related internships is needed to identify the gap between students pursuing laboratory careers and the projected workforce need. As a first step, Milwaukee's LSIP would conduct an assessment to determine the demand for laboratory internships among academic institutions and the internship capacity among public and private sector laboratories in Milwaukee. Conducting the assessment via a self-populated website was discussed as an option. The Wisconsin Hospital Association was identified as a resource for workforce capacity data that will be used as a part of the assessment.

Two meetings held during May were critical to advancing this objective – a meeting on May 14 with L-SIP Workforce Development-Internships Committee Chair Randall Lambrecht, and a subsequent meeting on May 24 with Lambrecht as well as Nancy McKenney, Director of Workforce Development and Public Health Workforce Development Project Coordinator for the Wisconsin Department of Health Services.

A potential workforce shortage in the area of Certified Medical Laboratory Technicians identified through these meetings and committee discussion was targeted as the focus for this survey. As a direct result of our May 24 meeting, McKenney incorporated questions developed by the Workforce Development-Internships Committee related to MLT/CLT students and internship capacity into the 2012 Wisconsin Clinical Laboratory Science Workforce Survey. The survey will be sent out in July, 2012, reaching and garnering feedback from laboratories throughout the state. Judy Warmuth, Vice President of Workforce Development, Wisconsin Hospital Association has indicated her support and input in these efforts, given work done on similar issues with Dr. Lambrecht.

As we move forward, we plan to convene a subcommittee of academic programs and employers to look at the workforce survey data and discuss factors such as how to assess the capacity of academic/training programs for MLT, the number of students in the pipeline, internship capacity, graduation rates and employment outcomes, ultimately determining how to get more students into programs with meaningful internships.

Future progress of this committee depends upon funding of the HWPP grant or similar grants in the future.

C. Workforce Development – Promotions: Milestone Objectives

- 1. *Seek out success stories at two subcommittee meetings***
- 2. *List of media contacts***
- 3. *Documented LPHL success stories***
- 4. *First round of media outreach***

A meeting of the LPHL Promotion subcommittee took place on April 26, 2012. The purpose of the meeting was to brainstorm ideas about how to promote the LPHL system with a focus on attracting people to laboratory professions. A list of ideas for promoting lab careers and LSIP were generated. As a first step, the radio station of the Milwaukee School of Engineering (MSOE), that has a BioMolecular Engineering Program, was contacted and is willing to air LSIP-related “stories.” Additional ideas and strategies for promoting laboratory careers and LSIP were generated by proposals submitted by Mueller Communications, Inc., a public affairs and marketing company. These ideas were used in submission to the grant described below and included details for developing messaging from a youth perspective, creating awareness through earned media placements, use of social media, strengthening community partnerships, and generating policymaker awareness. Future grant funding will be needed to support and advance these efforts.

Dr. Sanjib Bhattacharyya (Deputy Laboratory Director of the City of Milwaukee Health Department Laboratories) attended an APHL sponsored two day conference on storytelling on June 14 and 15, 2012. This information was shared with and used by Patrick Heffrenan, an MHD laboratory undergraduate AHEC-CHIP intern (June-July 2012). Through interviews and some videotaping Patrick has created three laboratory “stories” that will be used to promote LSIP: multiple-drug-resistant TB, water quality testing, and antimicrobial resistant gonorrhea. In addition his story has been documented as well as a videotape of his LSIP presentation to other undergraduate health interns. These will be used to promote laboratory careers on our website and in printed material.

The HWPP grant proposal entails a traveling exhibit of LSIP and laboratory careers among other initiatives.



Dr. Robert Burlage, Department of Pharmacology,
Concordia University

Cynthia Brown, College of Health Sciences Univ.
Wisconsin Milwaukee

Dr. Steve Gradus, City of Milwaukee Health
Department Laboratory

Dr. Gul Afshan, BioMolecular Engineering, Milwaukee
School of Engineering

Mark Spellman, United States Postal Inspector and FBI

D. Additional Milestone Objectives

1. **Submit abstract for 2012 Annual Meeting :**

Abstract was accepted and poster presented at APHL's annual meeting in Seattle, title: Milwaukee's Local Laboratory System Improvement Program Action Plan. Our LSIP project was also shared at a Round Table session at the APHL Annual Meeting: Gradus, M.S. May 22, 2012. Round table presentation. Innovation Awards Which Aid in Higher Efficiency Laboratory Management Practices. The Milwaukee Laboratory System Improvement Program (LSIP). Association of Public Health Laboratories Annual Meeting. Seattle WA.

2. **Provide update of Milwaukee's LSIP to LPHL stakeholder community:**

Co-chair meetings and grant application, internship assistance and incidental achievements (see Appendix) were accomplished.

3. **Grant Proposal**

A Letter of Intent for funding was submitted to the Medical College of Wisconsin's (MCW) Healthier Wisconsin Partnership Program (HWPP). Other steps in pursuit of this goal have included acceptance of a Letter of Intent to apply for the HWPP grant (see attached reviewer feedback and scoring scale), and staff attendance at two HWPP full proposal workshops on June 12 and 14. Our proposal was one of eight impact proposals to advance, from a total of 15 impact LOI submissions.

With the assistance of the consultant through LSIP Innovations Grant funding and the AHEC intern and internal MHD staff, a 72 page grant proposal totaling \$568,921 has been submitted to continue LSIP initiatives listed in this report for an additional 3 years, followed by a re-assessment in the 4th year, 2016. Funding would include a full time project coordinator and part time meeting facilitator for the duration of the grant. In addition funds would provide support for research opportunity surveillance from a program manager at the University of Wisconsin - Milwaukee Zilber School of Public Health. Funds are being sought to support specific initiatives identified by the subcommittees to enhance research and strengthen workforce development within Milwaukee's LPHL System.

The co-chairs from all three committees (Research, Workforce Development-Promotion and Workforce Development-Internships) met on June 15 to determine grant strategies and priorities for the HWPP grant. Grant strategies were established for each L-SIP component. For example, a possible goal identified for research was to develop a web-based, searchable research inventory. LPHL system promotion options include developing a smart phone app or establishing a Discovery World station, while a focus for workforce development/internships is to provide support for internship programs, such as mentors and TA to internships sites.

HWPP Grant Strategies - List of Options

Personnel:

1. Portion of Dr. Frank's salary (required): to assist with MCW & CTSI interface, research co-chair responsibilities and administrative functions.
2. Subcontracted Project Coordinator

Research:

3. 2-4 meetings (1 per quarter) per year to gather researchers to facilitate cross-institutional, multi-disciplinary research.
4. Web-based, searchable research inventory including regular updating.
5. Individual to monitor grant sites to identify funding opportunities: UWM Zilber School of Public Health.

LPHL Promotion (See Results of Brainstorming):

6. Lab Career Conference sponsored by a consortium of LPHL system organizations (See Texas and Michigan examples)
7. Smart Phone app (disease detective concept)
8. Discover lab careers web-site and promotion campaign (See Johnson & Johnson site discovernursing.com). Hire marketing firm?
9. Laboratory tours for students during Medical Laboratory Week and National Public Health Week)
10. LPHL System display for community events
11. Discovery World station
12. Traveling display (posters) of LPHL System in Action

Workforce Development/Internships:

13. Assessment of supply (students & academic programs) and demand related to Certified Medical Laboratory Technicians and Certified Medical Technologies. There are currently high vacancy rates.
14. Provide support for internship programs such as mentors & TA to internship sites.

General:

15. One (or one per year) LPHL system-wide stakeholder meeting to engage and reengage the broader LPHL system stakeholders.
16. Funding for another assessment in 3 years.

4. LSIP Intern:

AHEC 8-week internship to assist LSIP: The Milwaukee Area Health Education Center (MAHEC) matches student interns from the 2012 Community Health Internship Program (CHIP) with local health departments and other health agencies throughout the area to address a variety of public health issues.

INTERN PROJECT: Laboratory System Improvement Program: Assist Strategic Planning Implementation

Goal: Intern to assist with surveying, developing, administering and inventory of stakeholder activities related to the 3 strategic directions of the Laboratory System Improvement Program: i) research (interests, technological capacity), interests, and technological capacity; ii) internships (needs and capacity), and iii) documentation of interesting system “stories” for promotion of the laboratory profession.

Accomplishments: The intern provided LSIP grant proposal assistance, participated in LSIP grant writing/training; researched career promotion for a career day calls to Texas, Iowa and D.C. successful programs for information; interviewed MHD laboratorians and wrote three “stories” to be posted on our LSIP website and to be used for future promotions; was one of 3 of 33 interns voted to present his internship experience to the entire group of 33 interns and mentors thus educating a community of PH professionals on LSIP. A video of this talk will be posted on the MHD LSIP webpage. As a result of his internship Patrick is seriously considering making public health a professional goal after medical school.

III. CHANGES

A. Project

It was decided that rather than convening committees right away, that due to the complexity of the problems being addressed, especially internships related to workforce development, that working with co-chairs one-on-one and fact finding with individual stakeholders would be a more prudent approach. In this way leadership would have more factual information and a better understanding if interagency issues when committees are convened.

A grant opportunity to continue LSIP for an additional 4 years was recognized through the Medical College of Wisconsin’s Healthier Wisconsin Partnership Program. This is a 3-5 year grant based on an ongoing community project, such as LSIP, not to exceed \$750,000. We had great community support from co-chairs, stakeholders and laboratory administration to pursue this opportunity.

B. Budget

The Innovations Grant consultant needed additional hours to assist with grant writing for the HWPP grant application to continue LSIP. At the same time we had unspent dollars attributed to meeting costs which could now use to further support consultant hours.

IV. LIST PARTNERS

LSIP-related partnerships fell into the categories below and included the following individuals and organizations:

A. L-SIP Community Co-chairs:		
Name	Title	Affiliation
Gul Afshan	Professor/Program Director, BioMolecular Engineering	Milwaukee School of Engineering (MSOE)
Dara Frank	Prof. Micro. & Molecular Genetics; Dir., Center for Infectious Disease Research	Medical College of Wisconsin (MCW)
Randall Lambrecht	Vice President, Research & Academic Relations	Aurora Health Care
David Petering	Director, Children's Environmental Health Sciences Core Center	University of Wisconsin- Milwaukee (UWM)
B. Workforce Development-Internships Subcommittee:		
Name	Title	Affiliation
Randall Lambrecht (chair)	Vice President, Research & Academic Relations	Aurora Health Care
Nancy McKenney	Director, Workforce Development	Wisconsin Dept. of Health & Family Services
C. Workforce Development-Promotion Subcommittee:		
Name	Title	Affiliation
Gul Afshan (chair)	Professor/Program Director, BioMolecular Engineering	Milwaukee School of Engineering (MSOE)
Cindy Brown	Clinical Associate Professor; Dir., Biomedical Sciences undergrad programs	UWM College of Health Sciences
Robert Burlage	Professor, School of Pharmacy	Concordia University
Mark Spellman	Postal Inspector	U.S. Postal Service
Steve Gradus	Laboratory Director	City of Milwaukee Health Dept. Laboratory (MHDL)
D. Research Subcommittee:		
Name	Title	Affiliation
Dara Frank (co-chair)	Prof. Micro. & Molecular Genetics; Dir., Center for Infectious Disease Research	Medical College of Wisconsin (MCW)
David Petering (co-chair)	Director, Children's Environmental Health Sciences Core Center	University of Wisconsin- Milwaukee (UWM)

Anthony Azenabor	Professor, School of Health Sciences	UWM
Tom Bray	Dean of Applied Research and Grants	MSOE
Michael Carvan	Shaw Associate Scientist, School of Freshwater Sciences	UWM
Michael Costello	Director of Microbiology	Aurora Consolidated Laboratories
Lon Couillard	Water Quality Manager	Milwaukee Water Works
Marija Gajdardziska-Josifovska	Associate Dean for Natural and Biomedical Sciences & Engineering	UWM
Jack Gorski	Senior Investigator	Blood Center of Wisconsin
Jeanne Hewitt	Associate Professor & Associate Director, Institute of Environmental Health	UWM
Julie Kinzelman	Research Scientist/Laboratory Director	City of Racine Health Department Laboratory
Eva Marie Lewis	Forensic Science Supervisor	Wisconsin State Crime Lab
Sharon Mertens	Laboratory Manager	Milwaukee Metropolitan Sewerage District (MMSD)
Todd Miller	Assistant Professor, School of Public Health	UWM
Erik Munson	Microbiology Director, Midwest Clinical Laboratories	Wheaton Franciscan Healthcare
Agnieszka Rogalska	Assistant Medical Examiner	Milwaukee County Medical Examiner's Office
Steve Sobek	Laboratory Director	Wisconsin State Agriculture Laboratory
Sanjib Bhattacharyya	Deputy Laboratory Director	MHDL
Steve Gradus	Laboratory Director	MHDL

5 Additional researchers expressed interest in attending but had conflicting schedules.

Additional Stakeholders with a Commitment to Participate in L-SIP

Children’s Environmental Health Sciences Core Center Staff		
Name	Title	Affiliation
David Petering	Director	Children’s Environmental Health Sciences Core Center
Ronald Hines	Deputy Director	Children’s Environmental Health Sciences Core Center
Gail McCarver	Clinical Director	Children’s Environmental Health Sciences Core Center
Community Engagement Group, Clinical and Translational Science Institute (CTSI)		
Name	Title	Affiliation
Syed M. Ahmed	Associate Dean, Public and Community Health; Professor, Family and Community Medicine; Director, Institute for Health and Society, Healthier Wisconsin Partnership Program, and Center for Healthy Communities and Research	Medical College of Wisconsin (MCW)
Zeno Franco	Assistant Professor, Family and Community Medicine; Community Engagement Department of CTSI	MCW
David A. Nelson	Assistant Professor, Family and Community Medicine; Center for Healthy Communities and Research	MCW
Shannon Opel	Community Engagement Key Function; CTSI; Institute for Health and Society	MCW
Anne Kissack	Program Manager, Community Engagement Key Function, CTSI and Institute for Health and Society	MCW
Clinical and Translational Research, Medical College of Wisconsin (MCW)		
Reza Shaker	Joseph E. Geenen Professor and Chief, Division of Gastroenterology and Hepatology; Director, Digestive Disease Center; Senior Associate Dean, Clinical and Translational Research	MCW

V. SUSTAINABILITY

A. How will the project be sustained?

1. The MHD laboratory with community participation has submitted a grant, July 31, 2012, to enable continuation of LSIP for three more years with a re-assessment in year 4, 2016. Without this grant or other assistance it will be difficult to meet the goals and objectives that have been defined.
2. Encouragement to continue LSIP has been considerable from both individual stakeholders as well as institutions. It remains to be seen if that will translate into resources or not, but indications are optimistic.
3. The MHD Laboratory is creating a Laboratory Operations Manager position whose job description includes some LSIP functions

B. Are additional funds needed?

1. Yes additional funds for a consultant will definitely be needed.

VI. GAPS

A. What were the gaps?

Research: Research in the community is often done in isolation and silos and a need for improved communications is clearly needed based on numerous conversations.

Workforce Development: Based on talks with experts in the field and from preliminary surveys it is evident there is not clear picture of laboratory workforce needs and some institutions are in need of workforce development.

Laboratorians need to promote their profession. Based on experience, undergraduates are amazed at public health and related work opportunities once they become aware of these.

VII. LESSONS LEARNED

A. What might you have done differently?

- a. Possibly combined some committee efforts for more efficient use of time. Planned meetings much more in advance to assure better attendance. Communicate with stakeholders on a more regular basis to keep them apprised of ongoing developments and to receive more input. Create fewer milestones.

VIII. IMPROVEMENTS

Describe areas for improvement if you were to do this project again. (see above)

IX. SUPPORT

How satisfied were you with APHL's support and guidance during the grant fiscal period? **Support by APHL has been excellent.**

X. MEASURES

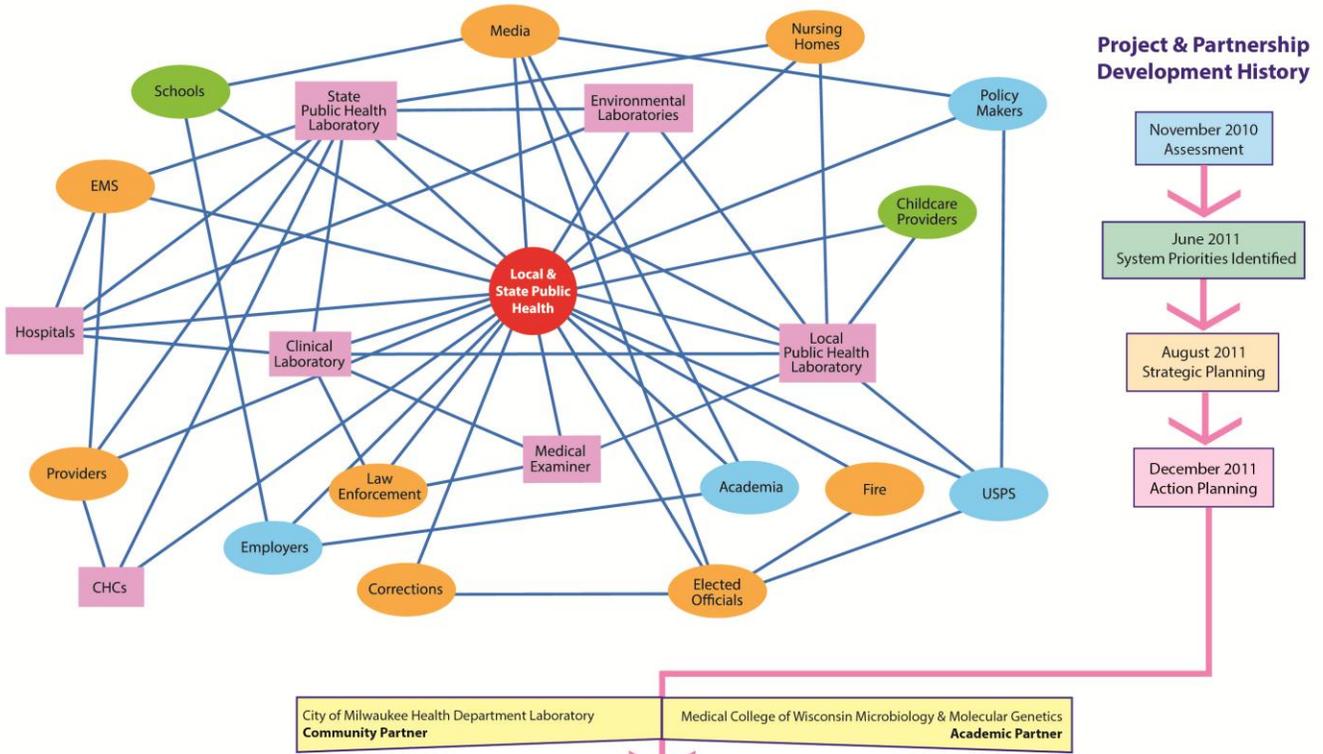
1. How many participants received and/or used materials created? **NA**
2. How many individuals? And/or sites participated? **Approximately 40 individual participated in various committee work from January through July 2012.**
3. If there was a training/event/meeting/forum:
 - a. Did the participants find the information useful? **There were many positive comments in all committee meetings. The intern LSIP presentation to other health-related interns was well received. One health professional expressed an interest in participating in workforce development issues.**
 - b. What impact did the project have on participants' knowledge of the laboratory practices addressed?

APPENDIX A.

Organizational structure and goals for HWPP grant application:

Local Public Health Laboratory System

A public health laboratory system is an alliance of organizations and individuals that operate in an interconnected and interdependent way to facilitate the exchange of information, optimize laboratory services, and help control and prevent disease and public health threats.



Purpose: Maximize LPHL system resources and optimize partnership capacity in support of workforce development, research and service.

GOALS

Research Subcommittee

Co-Chairs:
David Petering, UWM
Dara Frank, MCW
Sanjib Bhattyacharyya, MHD

Goal: Facilitate Collaborative Research

Objectives:
1. Develop a Research Inventory
2. Develop a Research Agenda
3. Facilitate Research Partnerships

Partner Organizations

- UWM School of Public Health
- UWM School of Freshwater Sciences
- UWM College of Health Sciences
- Milwaukee Metropolitan Sewerage District
- Milwaukee Water Works
- Aurora St. Luke's Medical Center
- City of Racine Health Department
- Wisconsin State Crime Laboratory
- Wisconsin State Agriculture Laboratory
- Blood Center of Wisconsin
- UWM Physics Department
- Milwaukee School of Engineering

Workforce Development Promotion Subcommittee

Co-Chairs:
Gul Afshan, MSOE
Steve Gradus, MHD

Goal: Attract a Competent Workforce

Objectives:
1. Sponsor a Laboratory Career Conference
2. Develop a Laboratory Career Web-site
3. Promote the LPHL System in Action

Partner Organizations

- UWM College of Health Sciences
- Alverno College
- Wisconsin Center for Public Health Education & Training
- US Postal Inspection Service/FBI

Workforce Development Internship Subcommittee

Co-Chairs:
Randy Lambrecht, Aurora Health Care
Steve Gradus, MHD

Goal: Assure a Competent Workforce

Objectives:
1. Analyze Laboratory Workforce Data
2. Convene academic programs and laboratory employers / Conduct an Inventory
3. Develop & disseminate best practices

Partner Organizations

- Wisconsin Department of Health Services
- Wisconsin Hospital Association
- Marquette University
- Milwaukee Area Technical College
- Milwaukee School of Engineering
- Aurora Consolidated Laboratories
- Wheaton Franciscan Healthcare Laboratories
- Dynacare Laboratories

APPENDIX B.

Milwaukee Laboratory System Improvement Program (LSIP) April 26, 2012 Workforce Development Subcommittee Promoting the Local Public Health Laboratory (LPHL) System

Results of Brainstorming:

1. Media Outreach

- MSOE – When interview dates are determine we will send an email to the full stakeholder community in Milwaukee to alert them to this event.
- WUWM – Lake Effect (focuses on Milwaukee); Need to determine how to pitch a story.
- Need to determine who has a story to tell that illuminates the LPHL System in action.

2. Promote the MHD Laboratory, laboratory professions, laboratory internships and the LPHL System in action through existing academic events

- College and University Open Houses
- 2-way links between colleges and universities with laboratory training programs and the MHD & LSIP.
- MSOE link to CTSI is an example.

3. Laboratory Tours during National Public Health or Medical Laboratory Week

- Coordinate tours of public and private sector laboratories for students. *Possible inclusion for HWPP Funding.*

4. Community Events

- Promote the LPHL System at events such as State Fair, Bastille Days, etc.
- Find a way to draw people into a booth/display to learn more about the LPHL System in action and laboratory careers.
- Example is a hand-washing station (sponsored by Kohler) to discuss disease prevention.

5. Discovery World

- Explore the possibility of having a station at Discovery World. Determine how to propose an idea, develop and fund? *Possible inclusion for HWPP funding.*

6. Develop an app for an iPhone or smart phone

- Develop an app that would be a game for younger children to learn about the LPHL System or laboratory functions in action (Gul has contact person). *Possible inclusion for HWPP funding.*

7. Organize a Conference for students on laboratory professions

- Establish a consortium of institutions interested in participating.
- Goal would be to get kids excited about laboratory professions and to raise awareness of the LPHL system in action.
- See Texas & Michigan examples.
- *Possible inclusion for HWPP funding.*

8. Develop a traveling display for LPHL stakeholders to put in their lobbies that focuses on LPHL System stories (picture and vignette)

- Examples include childhood lead poisoning or asthma (a child and discussion of lab tests central to blood lead and environmental testing); the story of polio (importance of vaccines and MHD connection/Krumbeagle & Sabin; J. Edgar Hoover letter); etc.
- Need to identify a marketing consultant. *Possible inclusion for HWPP funding.*

9. Identify APHL resources and best practices aimed at LPHL System Promotion/Workforce Development

APPENDIX C. Examples of Incidental System-Strengthening Apart from Strategic Planning

Visiting Researchers to Local PH Lab: discuss possible research collaborations:

1. Professor of Pharmacology: Concordia University – Toxics and poor birth outcomes
2. Physician neonatologist with Medical College – poor birth outcomes and toxics
3. Engineer from Marquette University investigating environmental impact of waste water and need for parasitology analysis
4. Director of research center, UW-Milwaukee: possible toxics and health outcomes
5. Professor of Pharmacology Concordia University: need for TB susceptibility testing

Speaking requests regarding public health, LSIP and the PH laboratory

1. Keynote address to area research group: PH research/programs, including LSIP, 12/11
2. Medical College of Wisconsin education day symposium: Fall 2012
3. Medical College of Wisconsin: provide seminar on aspects of PH research: Jan. 2013
4. PH Lab molecular testing: Milwaukee School of Engineering BioMolecular Program
5. Concordia Pharmacology Dept: PH molecular testing and applied research

Strengthening ongoing relationships

1. Milwaukee School of Engineering: PH lab staff appointment to Biomolecular Program
2. Marquette University lectures in undergrad PH course: MU Course Director on LSIP
3. Seminars to UW Water Institute
4. Milwaukee Area Technical College – Internship interests/collaborations

Interface with other local research consortia or planned discussions

1. NIH funded Clinical and Translational Science Institute: 8 Institution research consortium – contacts known, discussions resulted
2. Meet with CTSI Director and Community Engagement collaborations have been identified.
3. NIH funded Children’s Environmental Health Sciences Core Center – MHDL affiliated, participation.
4. Medical College of Wisconsin, Institute for Health and Society – contacts known, discussions planned
5. UWM School of Freshwater Sciences – contacts known, discussion planned
6. UWM Zilber School of Public health – MHDL affiliated – discussions to continue

Grant applications

1. Concordia University – Tuberculosis susceptibility testing
2. Concordia University - Toxics in at risk women
3. Marquette University – Parasitology related
4. Medical College of Wisconsin – HWPP Grant submitted