

Objectives

- Discuss the ways in which Lean is flexible and scalable
- Use Value Stream Mapping to shed light on the best process improvement opportunities in their own laboratory
- Describe key elements behind the successful application of any Lean tool and identify key points at which implementation can derail



Agenda

- | | |
|----------------|--|
| 8:00 | Introductions and Meeting Kick-off |
| 8:10 | Laying the Foundation - An Overview of Lean (Jill Power) |
| 8:25 | Transition to the exercises - explain the structure |
| 8:30 | Value Stream Mapping Exercise (Jyl Madlem) |
| 9:25 | Break |
| 9:40 | Rotating Stations |
| | ❖ Huddle Meeting Exercise, Primary Visual Display Boards, Metrics (Denise Lopez) |
| | ❖ 5S and Visual Process Controls (Jyl Madlem) |
| | ❖ Spaghetti Diagram and Workspace Planning (Jill Power) |
| 9:40 to 10:05 | FIRST ROTATION then ROTATE |
| 10:15 to 10:40 | SECOND ROTATION then ROTATE |
| 10:50 to 11:15 | THIRD ROTATION |
| 11:15 | - Q&A |
| 11:30 | - Adjourn |



Speakers



Denise Lopez, MS, PHM II
Public Health Lab Manager
ELAP Lab Director
Tulare County, CA



QUALITY
from
coast to coast!

What's your journey?

Jill Power, MS,
M(ASCP), CMQ/OE(ASQ)
Biosafety Officer/Quality Coordinator
NH Public Health Laboratories
Concord, NH

Jyl Madlem, MS, MT(AMT)
Laboratory Program Advisor
Indiana State Dept. of Health
Public Health Protection & Lab Services

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Lean in PHL

Dictionary:

adjective: spare, economical, lacking in fullness or quantity

The Lean Institute:

Lean means creating more value for customers with fewer resources.

Denise, Jyl and Jill -

Methods, tools and knowledge used to remove waste, improve and sustain system processes, and show value to staff.

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Why LEAN?

MAXIMIZE **value**

MINIMIZE **waste**

What processes create value?

What processes do not?

Improvement is necessary for survival!

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Types of Waste

TIM WOOD

Transport
Inventory
Motion
Waiting
Over Processing
Over Production
Defects

WORM PIT

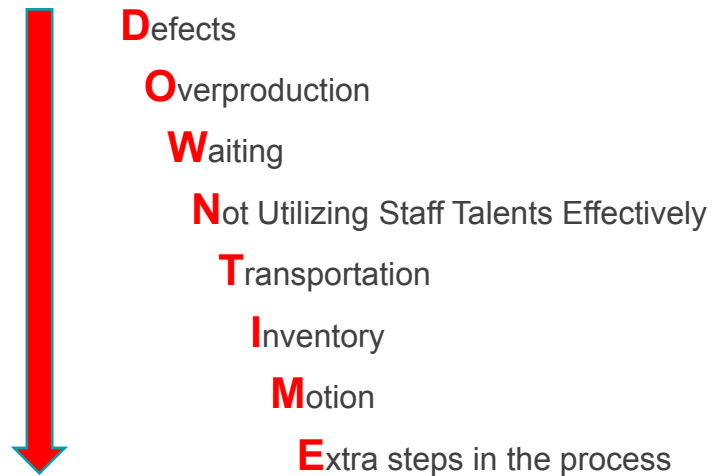
Waiting
Over Production
Rejects
Motion
Processing
Inventory
Transport



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The 8 Forms of Waste



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Lean Tools

VALUE STREAM MAP

- Represents the current process
- Shows where the delays are in your process
- Identifies restraints and excessive inventory
- First step in working towards your ideal state

KAIZEN

- a.k.a. Rapid Improvement Events
- Planned, structured process improvement effort
- Focus group
- Fast paced and thorough

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Lean Tools cont....

SPAGHETTI DIAGRAM

- A roadmap of movement, motion, transportation

RAPID CHANGEOVER

- Changing patterns
- Changing flows or processes
- Changing time limits

KANBAN

- “Vending Machine” – using a visual to replenish or restock inventory
- Pull system
- Just in Time

more...

5S

- Sort
- Store
- Shine
- Standardize
- Sustain

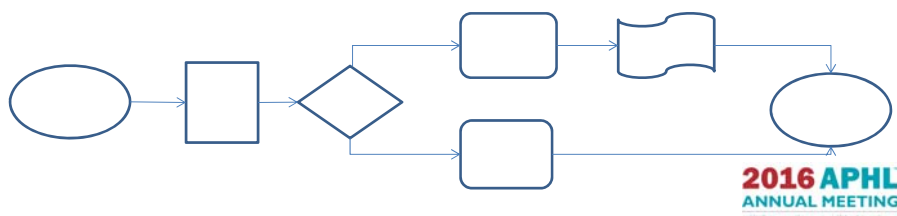
POKE YOKE

A Mistake Proofing System that:

- is “Idiot Proof”
- Prevents errors
- Catches mistakes

STANDARD WORK

- Standard operating procedures
- Training
- Flow of Processes
- Evaluations/Assessments/Audits



What is Efficient?

- Effective operation as measured by a comparison of production with cost (as in **time**, **energy**, or **money**.)
- Productive of **desired effects** without waste.



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Sustainability

Incorporate LEAN!

INCREASE productivity, customer and staff satisfaction, and efficiency

&

DECREASE operating costs, overstocked inventory, and undervalued processes.

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Today's LEAN Activities

Value Stream Mapping

Huddle Meetings

Primary Visual Display Boards

5S

Visual Process Controls

Spaghetti Diagram

Workspace Planning

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Questions?

Contact information

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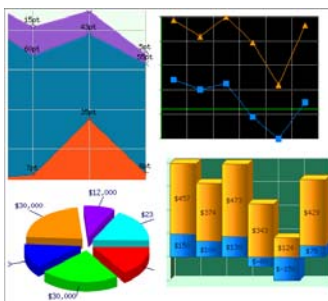
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Lean Daily Management Exercise



Lean Daily Management Exercise

- Plan, Do, Check, Adjust Cycle
- Huddle Meeting
- Primary Visual Display Board
- Metrics



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Spaghetti Diagram Exercise

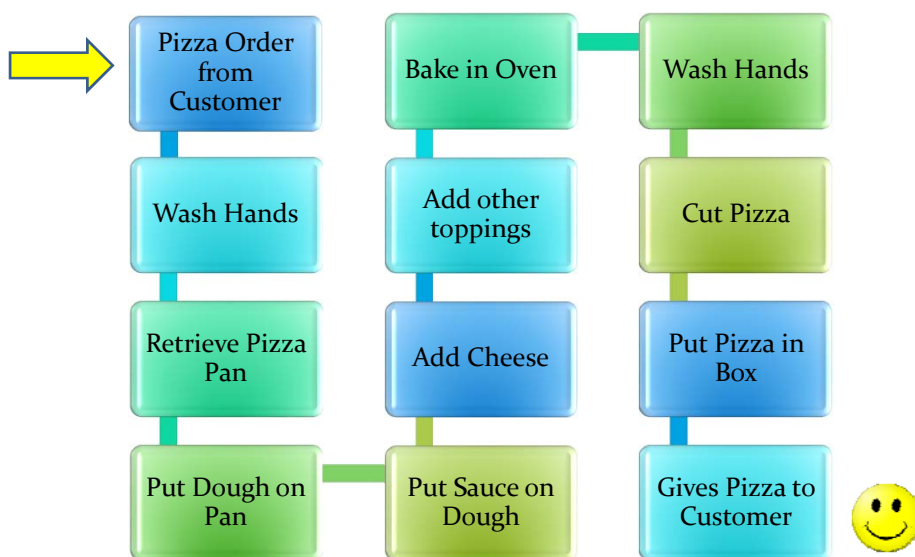


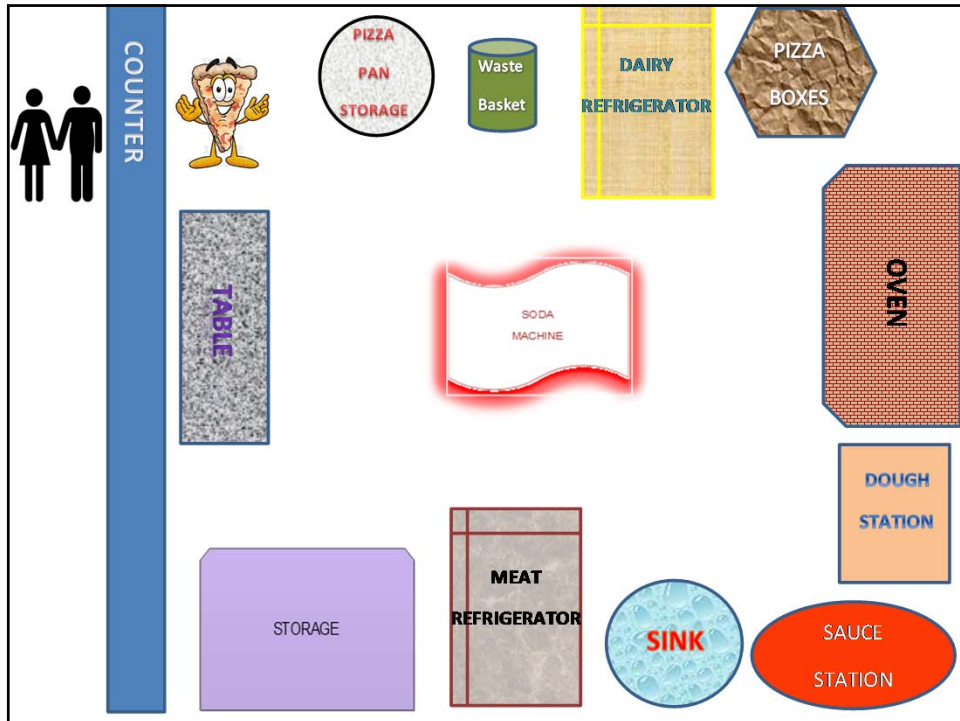
Spaghetti Diagram



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Pizza Making Process





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5S Exercise



5S: Defined



Sort- Eliminate whatever is not needed

Straighten- Organize whatever remains

Shine- Clean the work area

Standardize- Use visual cues guiding user through space (labels/colors)

Sustain- Make 5S a way of life

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Show Me the Value; Can the Waste

The Art of Value Stream Mapping



Environmental Water Monitoring: Sample Delivery Groups



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Creating a Process Map: A TEAM EXERCISE

- White easel paper- adhesive backing
- Tape
- Colored markers
- Pen
- Calculator
- Colored self-sticking notes
- Camera



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Creating a Process Map

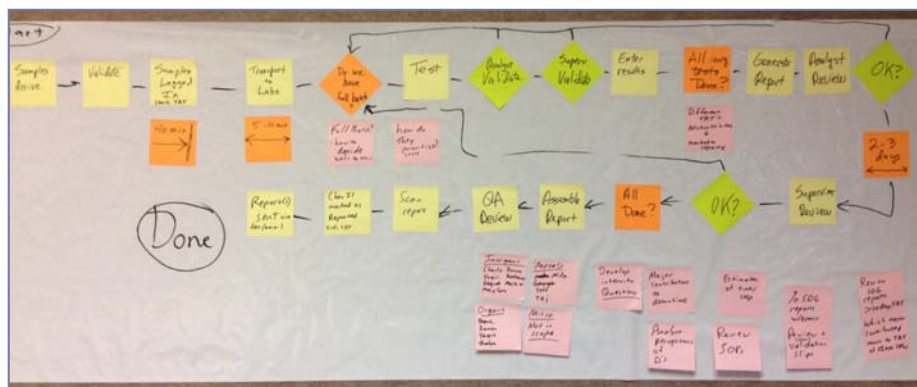
- People



- **Facilitator:** Your LEAN Champion- teaches/coaches/ mentors; removes roadblocks
- **Process Owners:** Those directly involved in the process. 1-2 representatives per group is fine.
 - **SMEs:** Subject matter experts

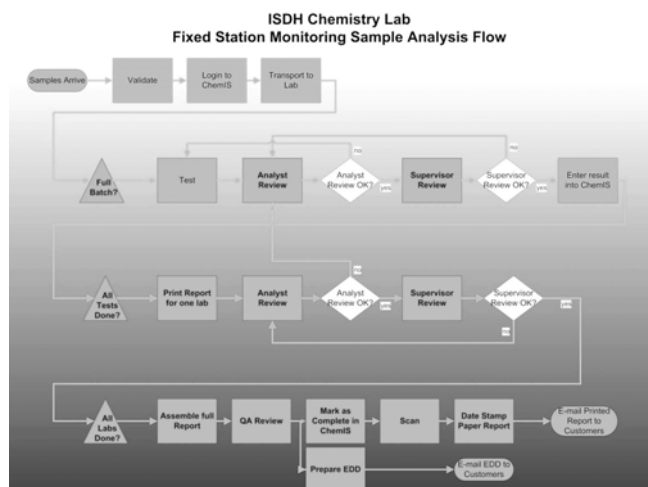
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Our Environmental Chemistry Process Map



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Process Map: Environmental Chemistry



Break out: Create Process Maps

- Vote: Vacation, Grocery, Work
- Create a Process Map in groups
- 10 minutes
- *doesn't have to be perfect

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Show and Tell

Each table presents process

Convert to Value Stream Map

- Identify **Value Added** and **Non-value Added**

Helpful Hint:

Use color-coding to identify

 VA  NVA

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● Value-Added

Everything we do should be questioned for **Value**.

- Is this **VALUE-ADDED**, as perceived by our customers
- Would the customer be WILLING TO PAY for it
AND would it meet their EXPECTATIONS?

ASK THEM!

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● Non-Value Added:

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- ▶ **D**efects
- ▶ **O**verproduction
- ▶ **W**aiting
- ▶ **N**ot Utilizing Staff Talents Effectively
- ▶ **T**ransporting (unnecessary transporting materials)
- ▶ **I**nventory (material, time, info)
- ▶ **M**otion (unnecessary movement of people)
- ▶ **E**xtra steps in the process

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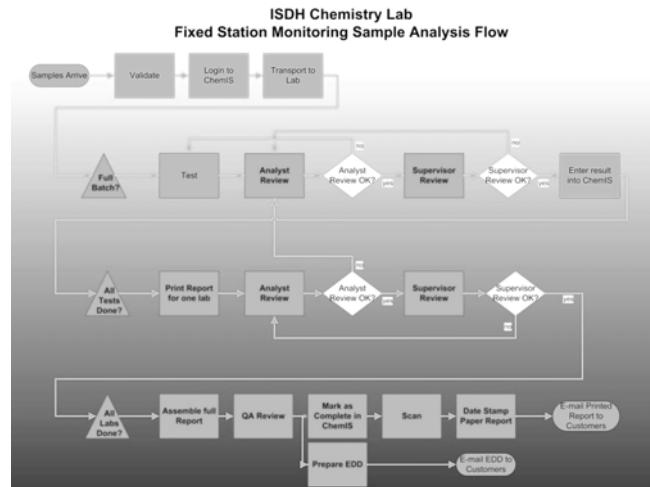
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● Not Value Added, but Required

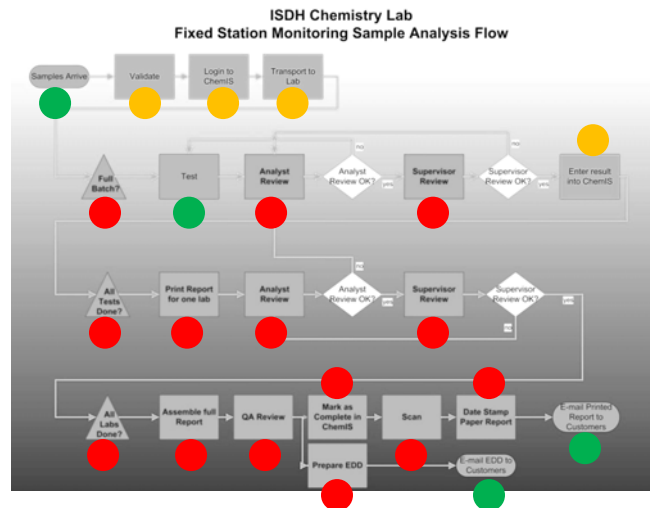
- Steps in process required by regulatory agency
 - Quality control
 - Standards
 - Temp checks
 - Safety
 - Other non-value added, but required steps in a process

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Process Map: Environmental Chemistry



Value Stream Map: Environmental Chemistry



Break out: Convert to Value Stream Maps

- Add Value ●, Waste ●, and Required ●, but not value added to your Process Maps to convert to Value Stream Maps
- 15 minutes
- *doesn't have to be perfect

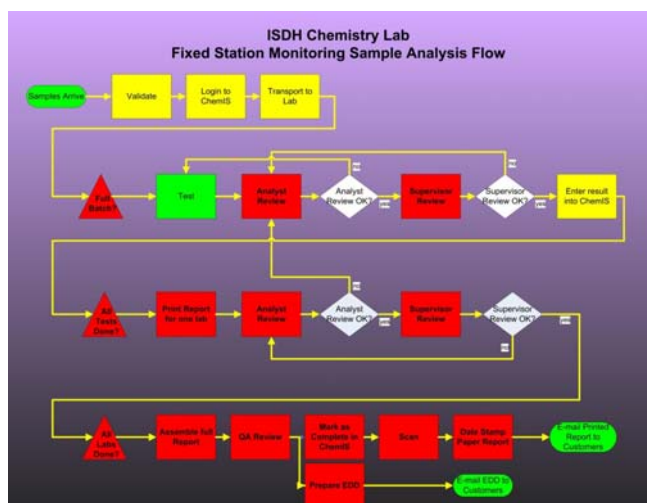
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Show and Tell

Each table presents process

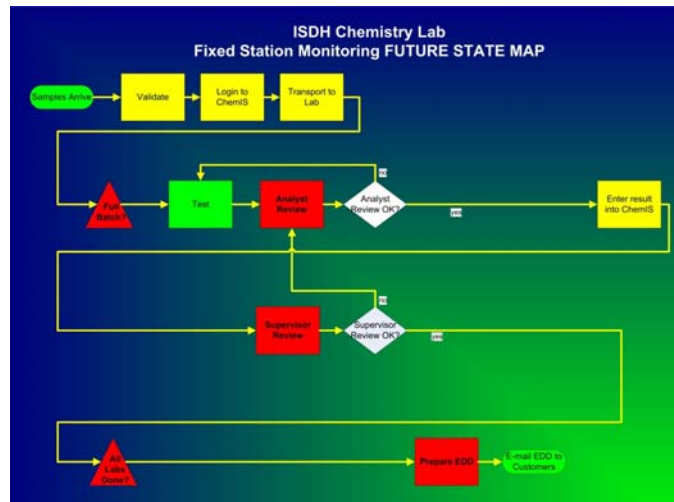
Value Stream Map: Environmental Chemistry



IMPROVE

- Created desired **future state** map eliminating as much waste as possible
- Used **Pareto Chart** results to recommend changes in ChemIS regarding due dates on weekends or following 31-day months.
- Developed **Effort/Impact Matrix** to guide other improvement efforts
- Used **Fishbone Diagrams** to identify specific issues causing delays

Value Stream Map (Future): Environmental Chemistry



•Many Lean tools to choose from

- Value Stream Mapping
- Spaghetti Diagrams
- Fishbone Diagrams
- 5 Why's
- 5S
- Impact/Effort Matrices
- Pareto Charts
- DMAIC

•Use what works for your purposes

•Involve staff from all levels

Questions?

Contact information

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5S Exercise

Let's Fix this Mess



What exactly is 5S?

- Mantra → quality work environment
- Work area condition has direct impact on employee morale/customer impressions
- Management attitude toward employees is reflected in the 5S condition of the work area.

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5S: Defined



- Sort-** Eliminate whatever is not needed
Straighten- Organize whatever remains
Shine- Clean the work area
Standardize- Use visual cues guiding user through space (labels/colors)
Sustain- Make 5S a way of life

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Benefits of 5S:

- Improved safety
- Lower error rates
- Reduced costs
- Improved employee morale
- More intuitive flow to the space
- Enhanced image to customers, suppliers, employees, and management

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5s - Sort

- Tag all items in a section:
 - Green (keeping)
 - Pink (discarding or surplussing)
 - Yellow (need group consult before deciding)
- Resolve all tags to either green or pink
 - Call all staff together if necessary

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Long-Term Claim Sheet:

- For the hoarders among us
- Provides accountability, reason to keep items not currently in use
- Taped to the claimed item
- Reviewed annually

Long-term Inventory Claim Sheet		
Name of person initiating claim sheet:		
Item you would like to claim (make, model, asset tag#):		
It's proposed use:		
Estimated value (estimate \$ if we just ordered it later, if needed):		
Keep? (group vote) Yes / No Date: _____		
This item should be re-assessed annually to see if it should continue to remain in inventory:		
Date reassessed (group vote):		
Keep? Yes / No	Notes:	
Date reassessed:		
Keep? Yes / No	Notes:	
Date reassessed:		
Keep? Yes / No	Notes:	
Date reassessed:		
Keep? Yes / No	Notes:	
<p>***When surplussing an item, please ask front office for assistance as there are specific forms that need to be filled out and special considerations for fixed assets. Thank you! --Denise</p>		

5S-Straighten

- Let the work guide the configuration as green items are sorted
- Order and implement new organizing tools as needed

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5S-Shine

- Remove all items
- Throw away or set aside items to surplus (pink)
 - Dumpster
- Clean/dust area and items

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5S-Standardize

- Bring green items back into space
- Set up visual controls to maintain the space
 - Label drawers
 - Label items
 - Color-code sections and items belonging there
 - Etc

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5S-Sustain

- Everyone working in area is responsible for maintenance
- Suggestions for changes and improvements, as they come up

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5S in Action

Before and After

5S: Kit Supplies

Before



After



5S: Storerooms

Before

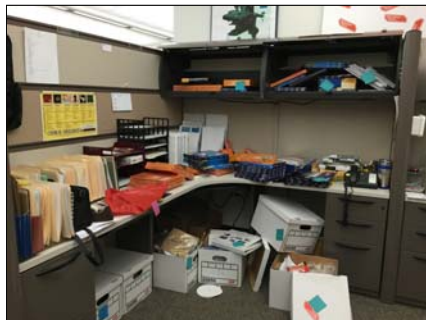


After



5S-Outreach and Training Area

Before



After



5S- Outreach and Training, Take two

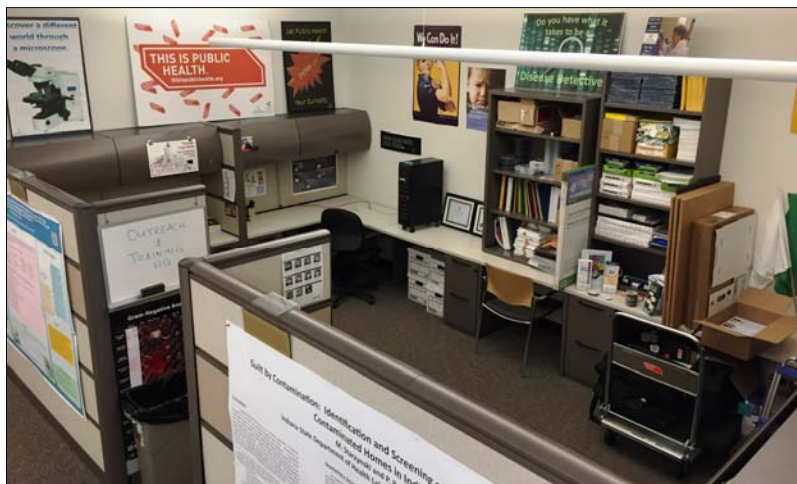
Before



After



Outreach and Training Area



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When supplies are organized, efficiency increases

- Lower risk of injury
- Lower risk of errors
- Improved efficiency
- Fewer wasted supplies
- Less time for inventory
- More time for special projects
- Higher employee morale

..and it just looks better!

Questions?

Contact information

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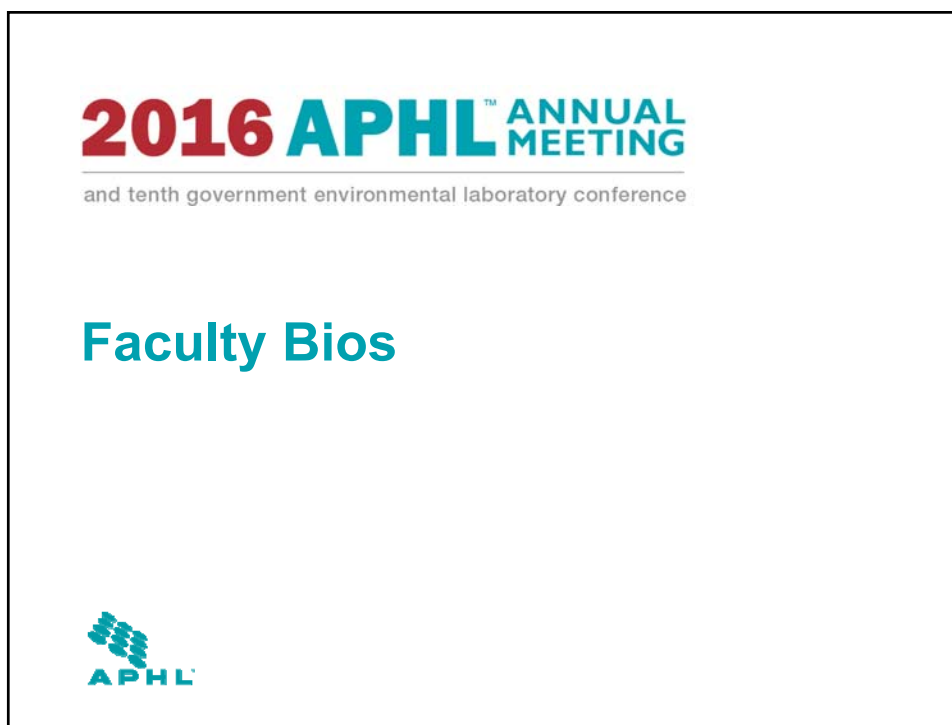
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Denise Lopez

Denise Lopez completed a 12-month Lean Leader certification program conducted with BD and APHL in August 2014. She has participated in on-site Lean consultation exercises in local and state laboratories. She has presented her lab's work with Lean in APHL's Quality Improvement Forum, in a round table and breakout session at the 2015 annual meeting, and in a 4-part webinar series produced by APHL. Her lab's work with Lean has been featured in 3 articles and a white paper.



Jyl Madlem

Jyl Madlem spent nearly 10 years with the Marion County Public Health Laboratory in Indianapolis. She managed 18-20 county-wide laboratories and began her lean training during her tenure there. Since moving to the state public health laboratory 5 years ago, she has been on 3 lean teams including environmental chemistry, food microbiology and outreach.



Jill Power

Jill Power is the former Quality Manager at the New Hampshire PHL and is now their Quality Coordinator and Biosafety Officer. She is also the chairperson of the APHL Laboratory Systems & Standards quality committee. Jill has participated in Lean training for APHL in the past and has helped with developing a 4-part Lean Webinar series for APHL. She is an ASCP registered Microbiologist and certified by the American Society of Quality as a Quality Manager and continues to do Lean projects in her laboratory.



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Lean Tool Kit

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Summary

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- Use Value Stream Mapping to shed light on the best process improvement opportunities in their own laboratory
- Describe key elements behind the successful application of any Lean tool and identify key points at which implementation can derail

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