Michigan Tech

Continuous Improvement Using Lean Principles

April 2018 Update

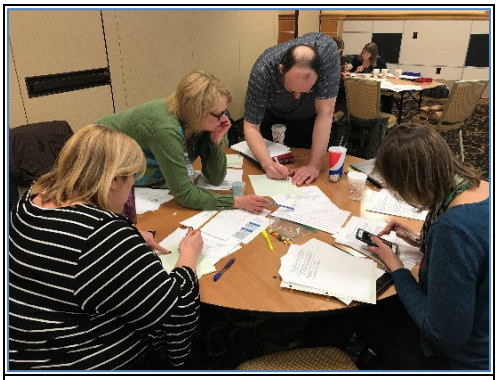
Lean Training for All Employees

The report out of the 5S Workplace Organization workshop.

The range of Lean training offerings has been broadened to build employee capabilities in the domains of Lean and safety. For several years, the Office of Continuous Improvement (OCI) has delivered a two-hour Introduction to Lean workshop and a seven-day Lean Facilitator Training program. However, there was nothing available between those extremes for the interested learner. This year, OCI launched an integrated set of courses and workshops designed to provide basic Lean knowledge and skills. Each course is independent of the others, yet once all of the courses are completed, the employee will have a broad understanding of important Lean concepts. The goal is to develop employees to the Continuous Improvement and Safety and Risk Management *Practitioner* level on the Michigan Tech Competency Model.

An exercise helps learners appreciate the value of fully understanding current state before making improvements.

Four workshops build skills in Lean methods that can be readily applied to everyday work. In the *Introduction to Lean* workshop, participants practice flowcharting and the identification and elimination of waste. The *5S Workplace Organization*, *Process Mapping*, and *Visual Management* workshops apply these practical Lean methods to the participants' real-world work problems. The participants attend a brief training session, then are paired with a skilled Lean facilitator. Over the next two days, the facilitator coaches the employee or team through their project, resulting in an immediately useable workshop product. At the close of the workshop, the participants and coaches report out on their project to the entire workshop group.



Lean learners creating visual representations of data collected during the Choco-Orbs Launcher activity.

The short courses support deeper learning of the fundamental Plan-Do-Check-Act (PDCA) model. *Evidence Based Problem Solving Methods* explores PDCA, and also the related problem-solving methods of Kata and A3s, for the development of problem solving using Lean thinking and practices. The other courses listed here expand on specific steps in the process:

Training participants learned how to use brainstorming techniques to increase the quantity and quality of improvement ideas.

- *Finding the Source of the Problem: Root Cause Analysis and Decision Making Tools,*
- *Collecting and Visualizing Metrics to Support Improvement,*
- *Countermeasures: Solving Common Problems using Lean Methods and Tools, and*
- *Combining Lean and Safety: A Powerful 1-2 Punch.*

After completing all of the courses, the employee will have developed an emergent Lean and safety outlook with a robust toolbox to support it.

Lean Outreach and Connections

- **Leaders in Continuous Improvement (LCI) Students Visit Industry.** With the assistance of Tech alum Heath Nunnemacher, ’08 ’10, who set up the itinerary using his personal and industry connections, LCI went on an industry trip to visit Empire Level, Galland Henning Nopak, and Charter Steel in Milwaukee, Wisconsin. The students saw Lean being implemented in small, medium, and large manufacturing companies. The trip was described in more detail in the Michigan Tech Lode.

LCI students ask questions after a tour of Empire Level’s Lean manufacturing processes.

- **Intro to Business Students Learn Lean Basics.** Jon Leinonen, a lecturer and startup challenge champion in the School of Business and Economics, invited the Office of Continuous Improvement to give a presentation on Lean Basics for the students in his Introduction to Business course. The students participated in an activity where they learned that implementing the Lean principle of one-piece flow in a process without using kaizen to include the people who are doing the work makes work harder for everyone.
- **Director of OCI Appointed to Michigan Performance Excellence (MIPEx) Board of Examiners.** After demonstrating commitment to the principles of performance excellence, Ruth Archer, PhD, was appointed to the 2018 Board of Examiners. MIPEx assists Michigan organizations in improving their performance through the application of proven continuous improvement concepts that ensure desirable results for customers, owners, employees, and other stakeholders.
- **Zupancic Visits from Standex.** Jim Zupancic is the VP for Operational Excellence at Standex. He and his senior operations leader Bryan Wadie visited Michigan Tech to learn more about how we are driving a Lean cultural evolution at the university. Zupancic and Wadie met with the OCI director, Lean facilitators, students, and career services. They were struck by how similar the issues were at our very different organizations.

A student process improvement coordinator leads the student-to-student information session on 5S workplace organization.

- **Student Process Improvement Coordinators (PICs) Lead Info Sessions.** Student PICs build both competence and confidence by creating and delivering information sessions designed to be peer-to-peer learning experiences. You can read more about this exciting event in the Michigan Tech Lode.
- **Schissler-Boichot Speaks to LCI.** Teresa Schissler-Boichot ’98 was a guest speaker at an LCI meeting. She spoke about how Lean supported rapid and sustained growth at Challenge Manufacturing over the last 5 years, then fielded questions from the audience.

Continuous Improvement Events as of April 2, 2018

Formal – Managed through OCI					**Informal**
Executive Team Area	**Active** as of 2 Apr 18	**Completed** since last report 24 Jan 18 – 2 Apr 18	**Completed** FY18 YTD 1 Jul – 2 Apr 18	**Completed** FY17 Full Year	Reported by Facilitators FY18 YTD 1 Jul – 2 Apr 18
Academic Affairs	3	1	2	4	9
Administration	3	2	9	6	4
Finance	1	0	0	3	0
Research	0	2	3	1	1
Student Affairs & Advancement	1	0	2	3	2
Total	8	5	16	17	16