IPRO 333 Timeline
Fall 2008

Introduction of IPRO 333
K-12 outreach program
Development of scientific standards
Development of projects/tutorials
Equipment/software training
Presentation to MSI educational staff
Audiences: members | science achievers
Open access | school children

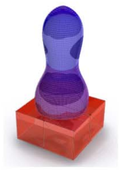
PROJECTS

There are dozens of exhibits on display at the Museum of Science and Industry. This semester, the goal was to integrate the Fab Lab into the current working exhibits as well as future exhibitions. The team focused on the use of small projects that reinforce the interactive learning of both the Fab Lab as a learning tool along with the Museum experience. The team divided the visitors into several age groups and skill levels. The project creators then developed the project ideas to suit children from the different age groups and skill levels.

These new projects include:

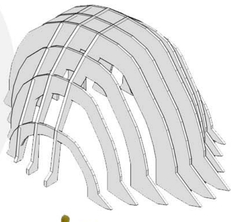
- Figurine Stamps
Designer: Shunsuke Nakano

The main idea of creating a stamp is to create a series of MSI exhibitions. Guests can create, customize, and collect stamps from each exhibit. The handle is created in 3D using the Modela, and the stamp itself is engraved by the laser cutter. Expanding from the collection of Museum exhibits, guests can even create their own stamp from any image they choose.



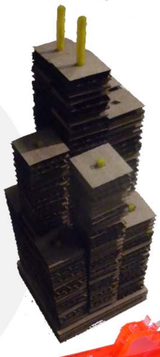
- Miner's Hat
Designer: Joe Luciani

The Coal Mine was the first interactive experience featured at the Museum, and has been a permanent exhibit since 1933. Guests have the opportunity to step on the hoist and take a narrated ride to the bottom of a mine shaft. After this experience, guests can come to MSI's Fab Lab to build their very own Miner's hat to further their interactive experience. This project allows guests to assemble a miner's helmet produced from the laser cutter using multi-directional slices. Working with a tutorial after assembly, guests have the option to add a small battery powered lamp to install onto the front of the helmet -- for those extra dark mine shafts.



- Scaled Replica of the Sears Tower
Designer: Mike Gajdorus

The Sears Tower is just one of many unique building designs that can be created with this model. The base of the tower is configured with 9 holes where rods of different lengths can be placed. A series of squares is then assembled on each rod, simulating a floor plate. With thousands of combinations, each tower will differ from the next.



- Submarine
Designer: Adam Winterbauer

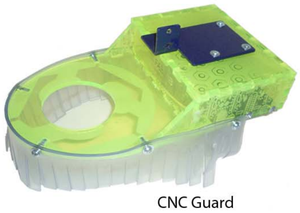
The World War II submarine model was inspired by the U-505 exhibit at the Museum of Science and Industry. This project demonstrates the limitless possibilities of the Fab Lab not only by adding a third dimension to the design, but by displaying an internal structure as well. The model was constructed from multiple slices based on the side profile of the submarine U-505. Its internal compartments were etched into the central slice with the use of a laser cutter and photographs of the sub's interior. By following some simple instructions from the project's tutorial, a U-505 model can be easily assembled and will inspire innovation and creativity in others.

- Periscope based on the MSI U-505 Exhibit
Designer: Mike Gajdorus

The U-505 Exhibit is one of the Museum of Science and Industry's biggest attractions – both in scale and in guest interest. When the US Navy captured the German U-Boat, both the Navigation periscope and the Attack periscope were removed and studied. This project allows museum guests to design, build, and take a piece of the U-505 with them as well. The model features two mirrors in separate acrylic casings that slide up and down to simulate periscope technology. Pieces are prepared on a laser cutter and assembled with help from a step by step tutorial, allowing for museum guests of all ages to recreate a piece of the exhibit they just visited.

Fab Lab Machine Development

- Modela tutorial
- Shopbot CNC tutorial
- CNC guard
- IPRO Day Display



CNC Guard

Proposed Project Ideas

- Floating Light Bulb
- Latern
- Flying Plane
- Magic Wand based on the Harry Potter Special Exhibit

Modela 3D Molds