

# Science Salon at Fab Lab

By Stephanie Yancey, Board Member



*Century College Fab Lab staff demonstrate lab equipment for Science Salon attendees*

*Photo by Dave Newell*

Our second Science Salon event was held November 7, 2013 to tour the Digital Fabrication Laboratory (Fab Lab) at Century College in White Bear Lake, MN. Approximately 50 guests were treated to a complimentary light meal catered by Dandelion Kitchens, with time allowed for socializing and networking. A short survey was also distributed to obtain input from our guests about future events. Those who turned in a survey were eligible to win a gift card from Ingredients Café.

After the meal, we gathered in the auditorium and Board President Mike Williams introduced volunteer Matt Hedlund from AAAS. Matt described how AAAS is partnering locally with the Academy in an effort to expand

STEM-related programs for members of both organizations. The Director of the Fab Lab, Dr. Scott Simenson, then gave a brief presentation on how the Fab Lab model was created under the guidance of Dr. Neil Gershenfeld with the Center for Bits and Atoms at MIT. One of the best aspects of the Fab Lab experience is the worldwide network of Fab Labs that are connected through video conferencing. This allows someone using any of the labs to ask questions or share ideas with other students and faculty anywhere, “24/7”. More labs are added every year.

We toured the digital lab (with our safety glasses on, of course) and saw how state-of-the-art 3D printers, laser engravers, mini mills, micro spot welders and open-source

software can be used to build prototypes of just about anything from the very small to the very large. The tour also ventured into a larger space that was more like a typical “shop class” with hand tools, band saws, presses and mills. In the middle of the room is a 4’x8’ ShopBot CNC router that uses CAD drawings generated by the students and staff to automate cutting large items from wood, plastics and metals. New equipment is being added as space and funding permits.

For students looking forward to a career in high-tech design or engineering as well as those inventors who just have an idea they want to become reality, there is something for everyone at the Century College Fab Lab.

# What is a Fab Lab?

By Eliza Grames, Communications Specialist

A Digital Fabrication Laboratory (Fab Lab) is an advanced workshop where innovative thinkers can build just about anything. Fab Labs are equipped with 3D printers, laser cutting equipment, design software, and other machines used in design and manufacturing.

The machines are not the heart of the Fab Lab. “The real focus is on the innovation, the engineering, the creativity, and the problem solving,” explained Scott Simonsen, Director of the Century College Fab Lab. “There’s a social framework to the Fab Lab in addition to the technological framework, and that’s how you’re going to work in the modern world.”

The Fab Lab network is truly global. Students at Century College are connected to the network through a PolyCom system built into the classroom. “Most of the Fab Labs are



*Abu Adam explains Fab Lab machinery*

*Photo by Dave Newell*

online,” said Abu Adam, a Century College engineering student working in the Fab Lab. “If you are working on a project and you have a problem, you can tell them and find out who can help.”

In developing countries, Fab Labs can be used to provide essential technology for communities. Fab Labs have been used to provide wireless internet to remote regions of Afghanistan, build self-sustaining solar homes, and construct thin-client computers. At one Fab Lab in India, engineers and community members built a tractor, water purification system, electricity generating system, and a computer all within the Fab Lab. Fab Labs without the capability to manufacture these products have access to the resources they need through the network. “If someone in Ghana, or Kenya, or Afghanistan doesn’t

have a 3D printer in their lab, they can shoot their files here and then one of the labs will print the file and send it back to them,” said Abu.

The collaborative spirit of the Fab Labs is at the center of their success. “Fab Labs aren’t just for manufacturing,” said Scott. “They’re using them in brain and cognitive sciences, computer science, mathematics, physics, etc... People from all these disciplines are coming into the Fab Labs and collaborating on ideas and solutions.” As the Fab Lab network continues to expand globally, partnerships between researchers, scientists, engineers, and educators will strengthen the STEM community.

More information about the Fab Lab can be found at <http://www.century.edu/currentstudents/fablab/>.



*Tech Shop*

*Photo by Dave Newell*