

Kansas Children's Discovery Center













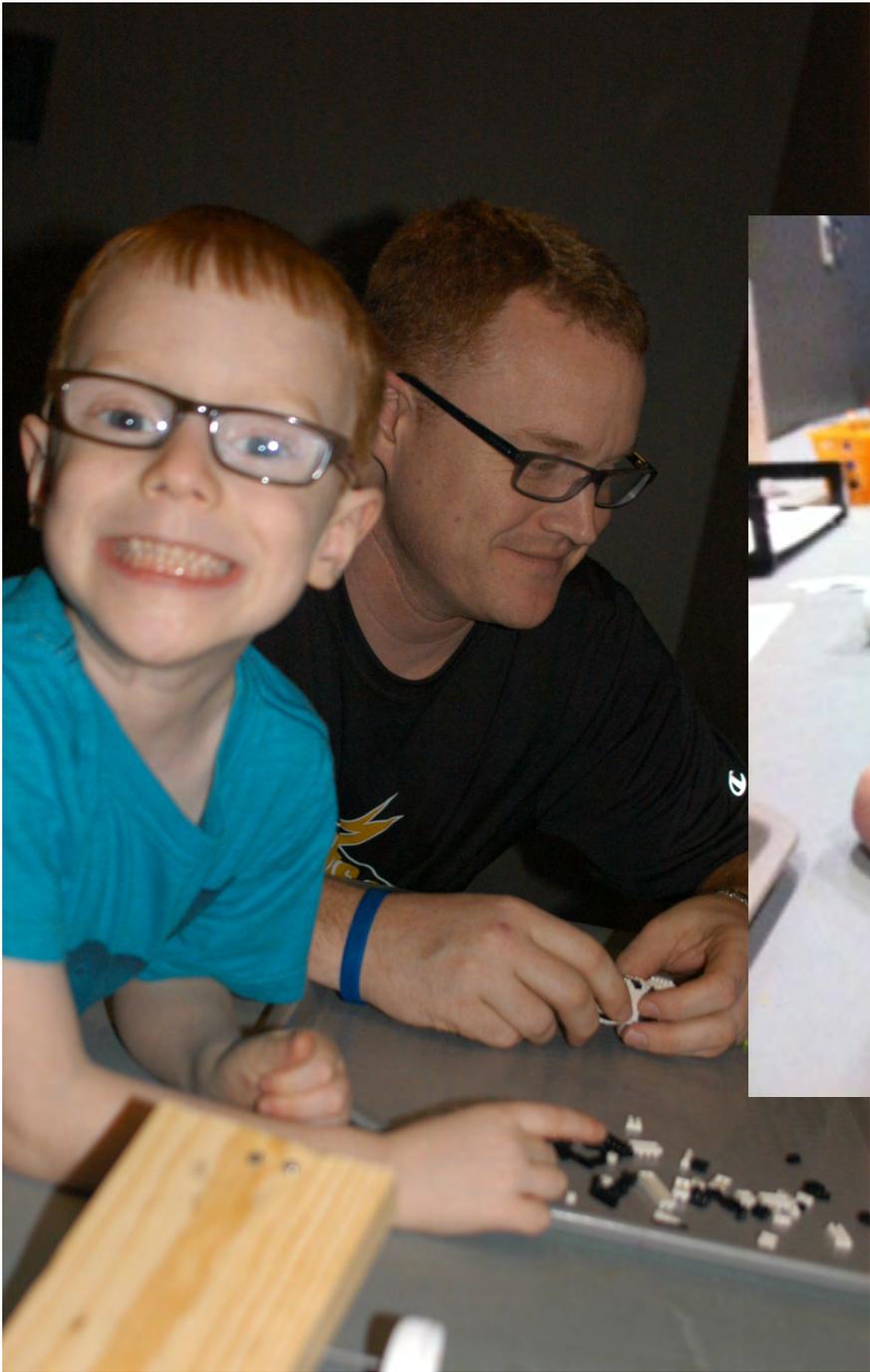














NISE Midwestern Regional Meeting, Oct 2013

Who We Are



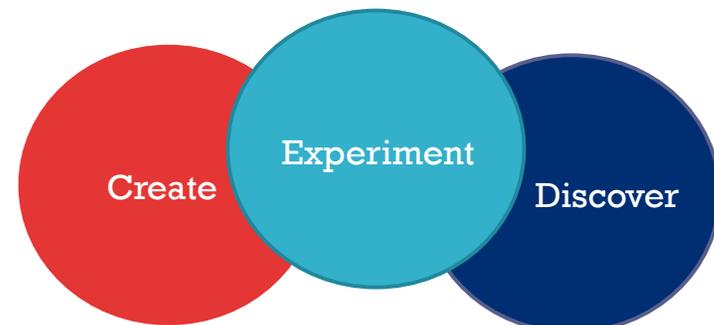
Who We Are



Who We Are



Outreach: Science on Wheels



- Several different 'flavors' of programming
- Over 40 programs offered

Nanoscience: The GIANT world of the very small



Current Offerings: NanoScience Workshops!

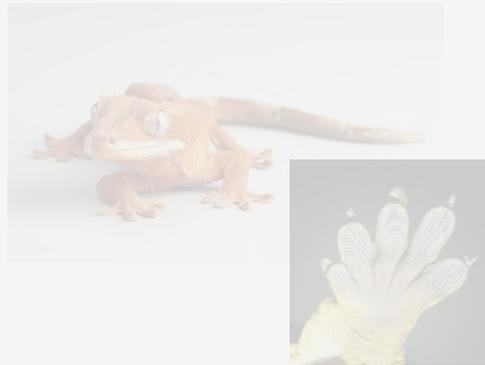


- ❑ So Scaley: Scale and the right tools for the job!
- ❑ Nanoscience in Nature
- ❑ Gecko Wall!
- ❑ Properties of nanomaterials
- ❑ Inventing the Future

Nanoscience: The GIANT world of the very small



Current Offerings: NanoScience Workshops!



- ▣ Scale
- ▣ Tools
- ▣ Nanoscience in Nature
- ▣ Gecko Wall!
- ▣ Inventing the Future

Future Directions: NanoScience Programs!

- ▣ Nano properties: Paper engineering
- ▣ Tools: Feely Boxes
- ▣ Paint with All the Colors of the Magnetic Field
- ▣ Inventing the Future



Questions?

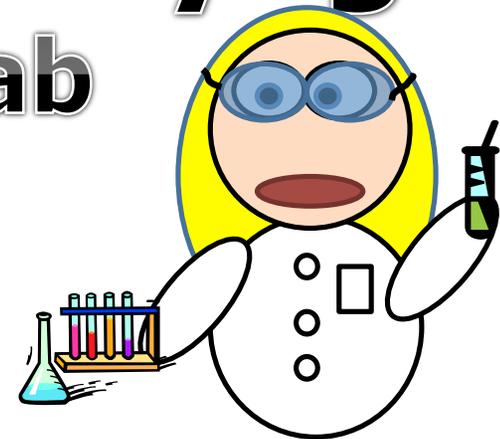
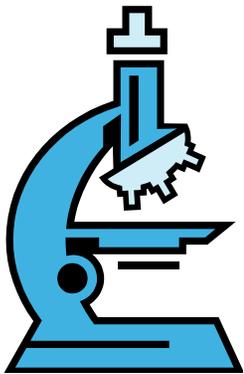


□ Thank you!



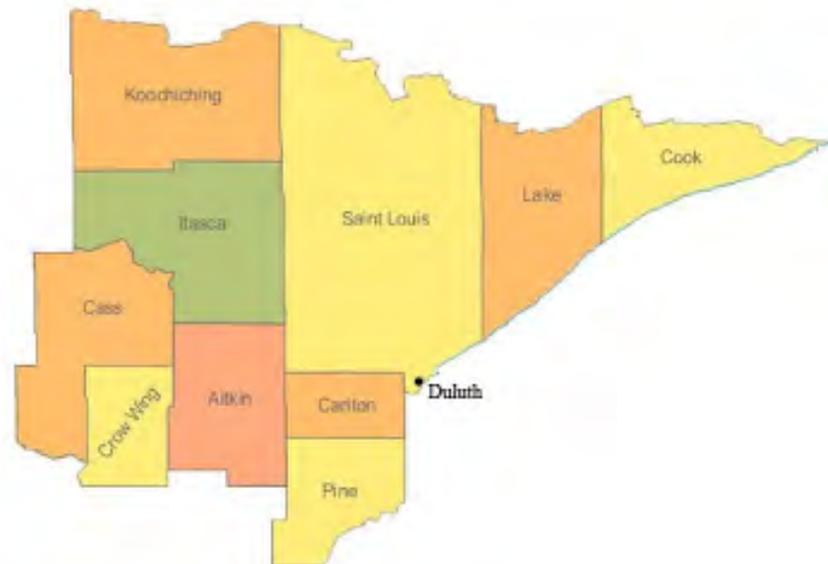
DULUTH CHILDREN'S MUSEUM

The Nanotastic Voyage Microscope Lab



Project Goals

- Establish a formal school group offering for field trips to support the Nano Mini Exhibit.
- Reach out to underserved areas outside of Duluth.
- Make better use of our nano kits.



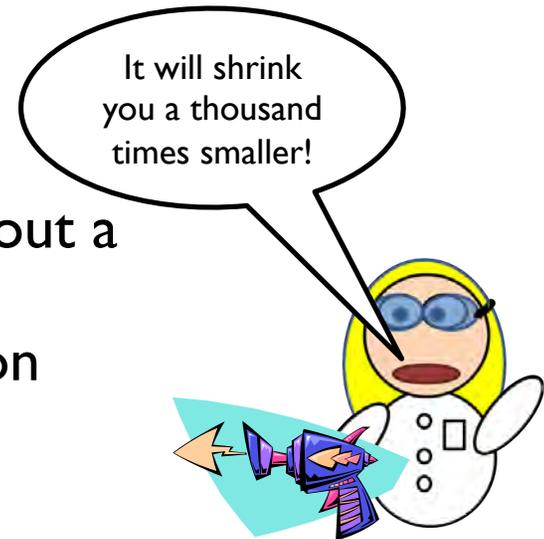


Educational Goals

- Explain nanoscale in a more concrete way for younger audiences.
- Adhere to the museum's focus on open-ended student-centered inquiry.
- Make the lesson flexible enough to support a wide range of state science standards.

The Plan

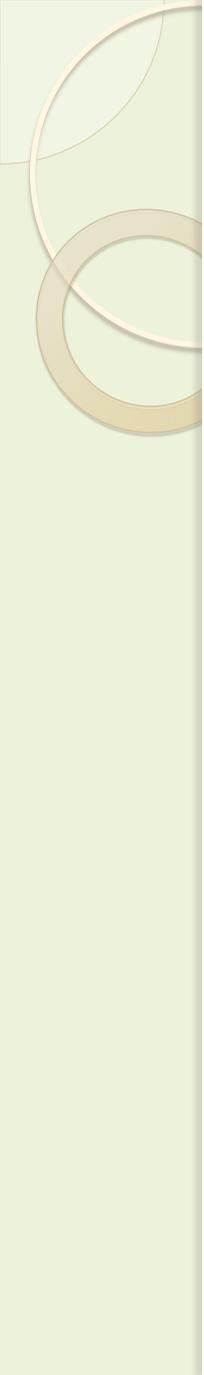
- A very simple powerpoint story about a person shrinking in a science lab.
- All programs include introduction on the scientific method.
- Open-ended exploration with a magnifying glass to demonstrate a millimeter scale (1000x smaller than a meter).
- Open-ended exploration with microscopes to demonstrate a micrometer scale (1000x smaller than a millimeter)
- Molecular Models and Nano Kits to demonstrate the nanoscale.
- Marketing and bus funds for areas outside Duluth.



The Results

- Groups from Proctor, Cloquet, Esko, a soccer team from Columbia, YMCA Girl Power, in addition to groups from Duluth attended the program in the spring.
- The program is being offered again this year.
- Good feedback from teachers and students.





Project Offshoot

- UMD education majors using nano kits to apply educational theory at the museum.
 - Students check out kits
 - Apply kit to methods and theories they are learning.
 - Teach at an event at the beginning of semester and again at end of semester.

Small Science Summer Camp

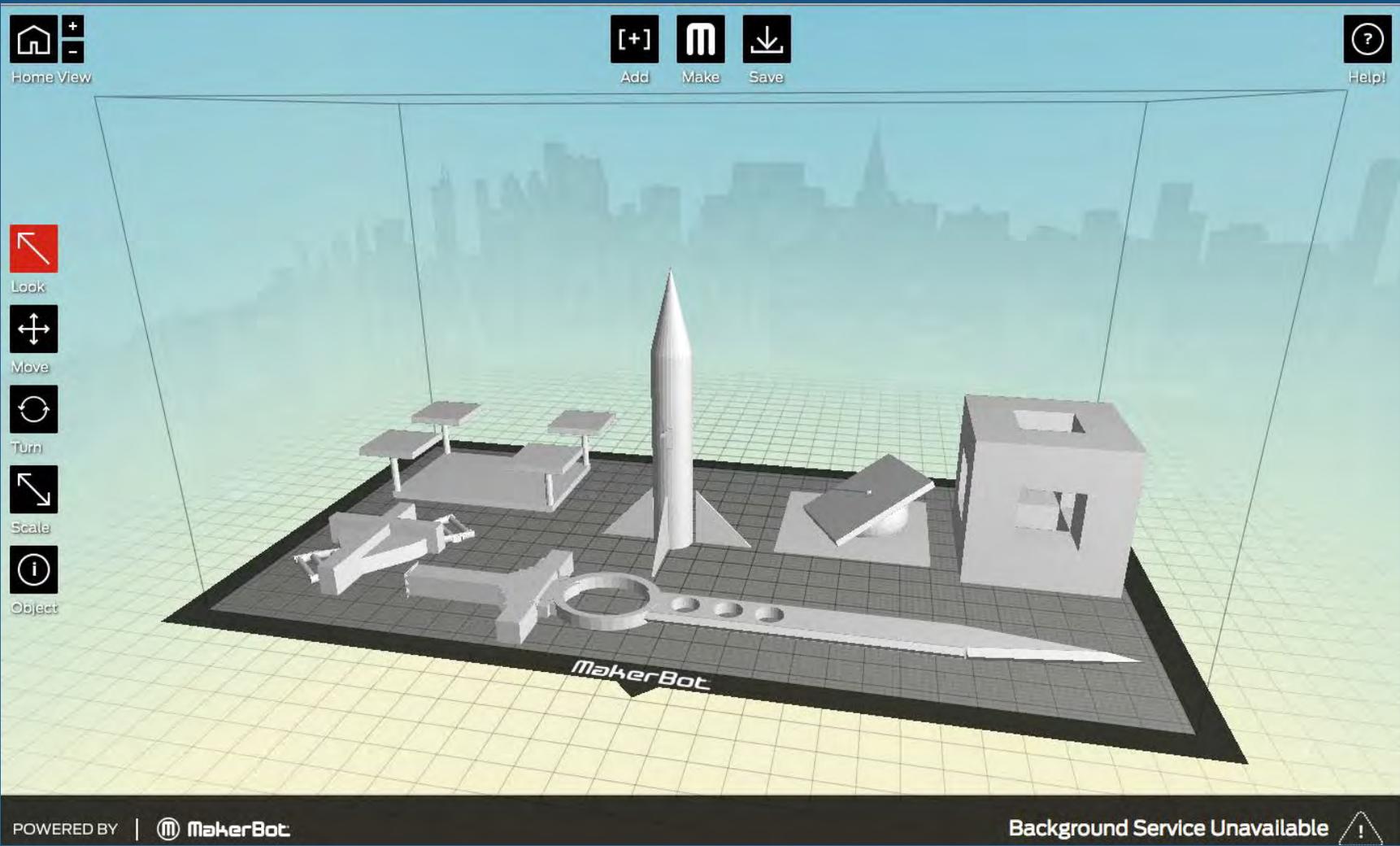
{ NISEnet Mini-grant
{ St. Louis Science Center 2013



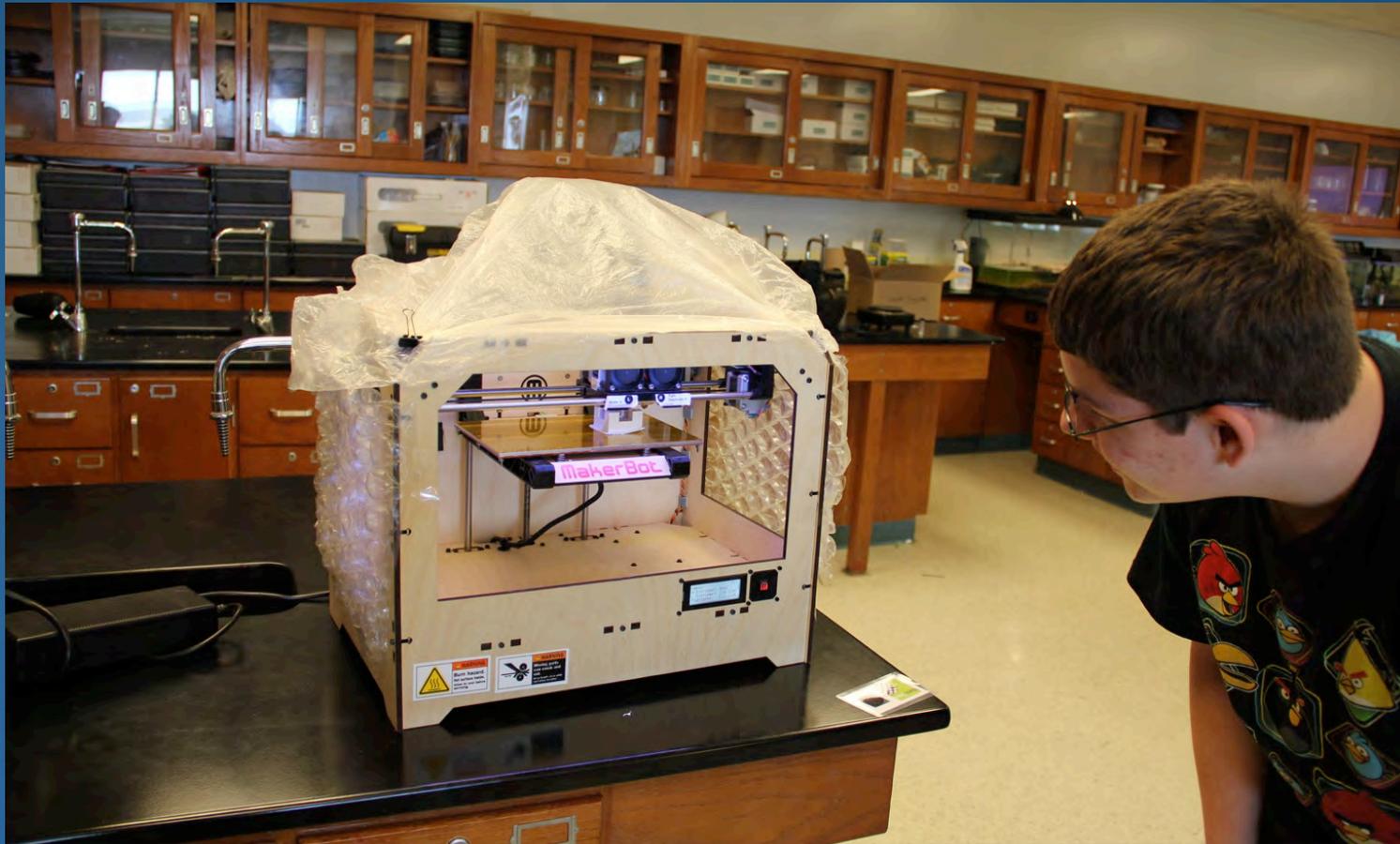
Nano Exhibit



3D Printing



3D Models



3D Printing



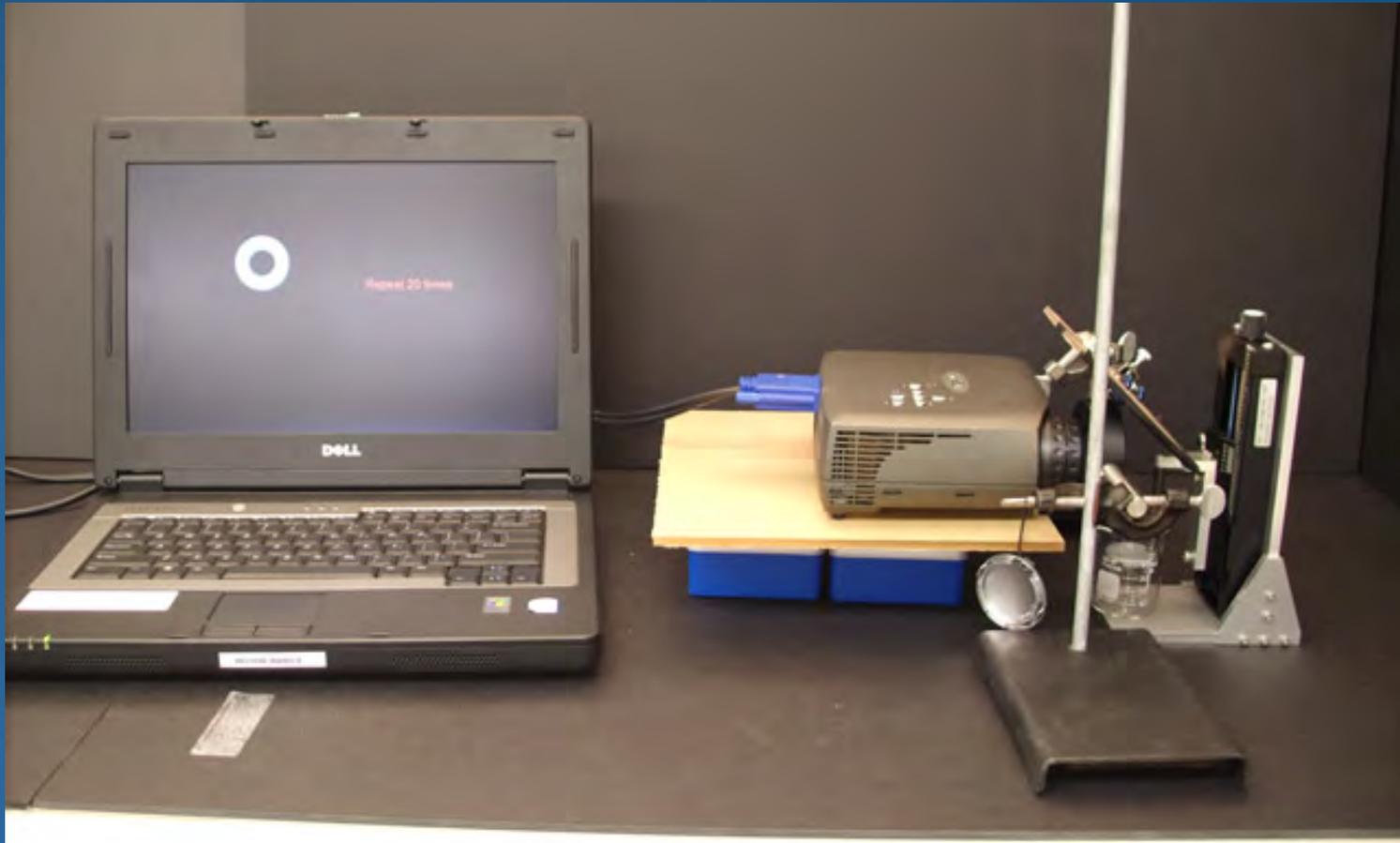
Liquid Crystals



Ferrofluid



Nano and Society



3D Printing with Nano



Our setup

& Knowledge – 3.86

& Enjoyment – 3.43

& Interest – 3.57

& Attitude – 3.57

Evaluations



Thank You & Questions