



# SOCK and MRSEC Summer Internship 2010

- Patrick Haddox
- University of Illinois at Urbana/Champaign
- August 3, 2010

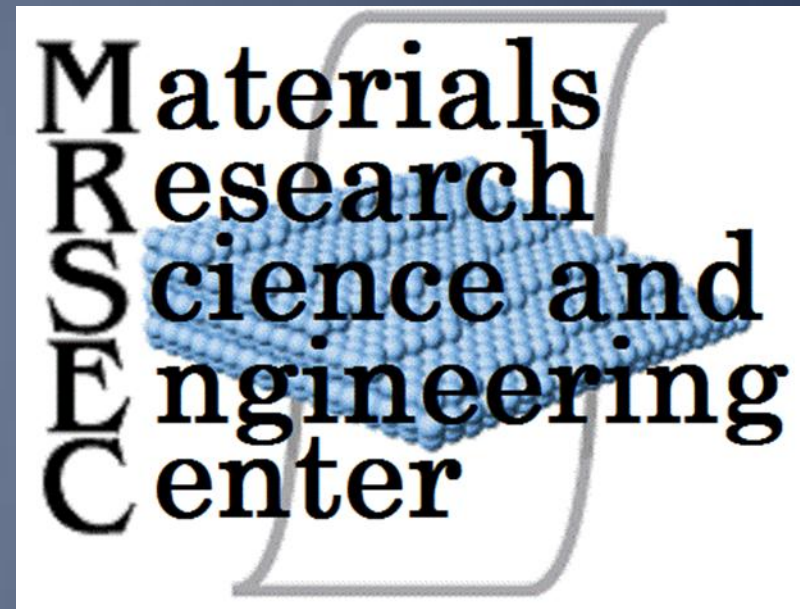
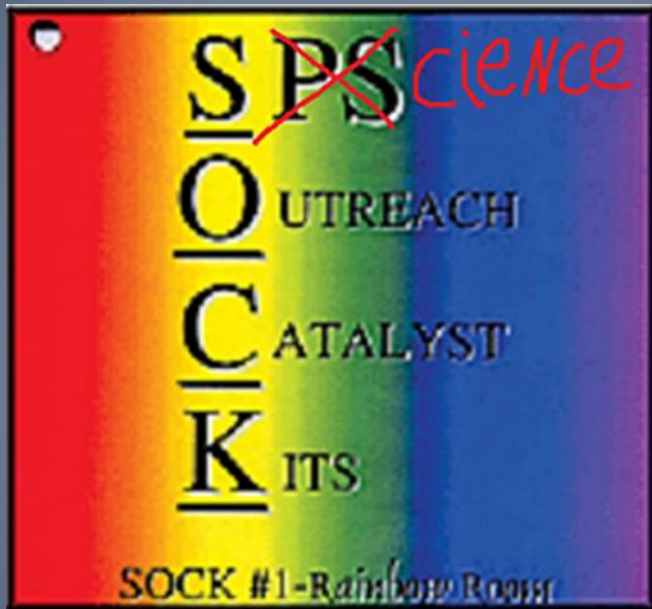


# About Me

- Double majoring in Physics and Engineering Mechanics - Aerospace
- Attended Illinois State University for 3 years (Physics)
- Going into my second year at the University of Illinois (Engineering)
- Society for Experimental Mechanics – Projects Chair
- I love staying active, especially outdoors. I also like to stay heavily involved in Physics/Engineering clubs at school



# A.C.R.O.N.Y.M.S.



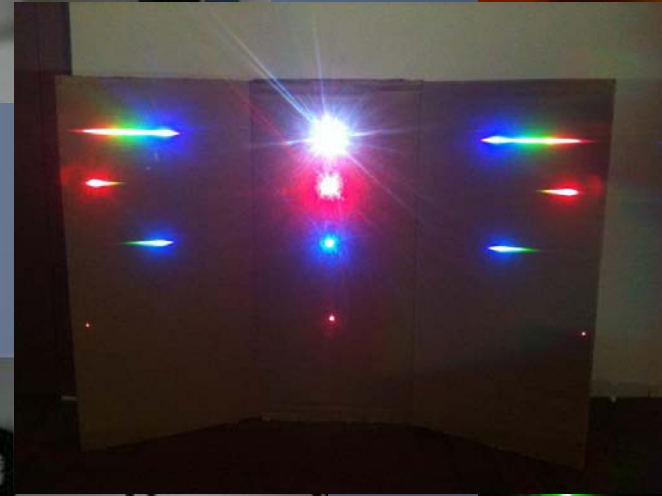
Light **A**mplification by **S**timulated **E**mission of **R**adiation

Pretty **A**wesome **T**errific and **R**idiculously **I**nteresting **C**ool **K**at

# The SOCK

## What I did...

- Laser Activity
- Hair Measurement
- Spectra Sound Kit
- LED Activity





# MRSEC

- Hosts a variety of science-based summer camps
- Engineering Design
- Science, Engineering, and YOU
- Nanoscience camp



# Engineering Design Camp

- High school camp
- Focuses on providing insight into being an engineer
- Students go over the design process and experience several experiments and demonstrations



# Gecko Tape

- Tape that only sticks when it's under shear stress
- Millions of tiny hairs provide grip
- Students make their own gecko tape
- They build a testing machine to determine the maximum stress the tape can withstand
- View hairs with scanning electron microscope



# Science, Engineering, and YOU Camp

- Elementary school camp
- Kids are exposed to a different science on each of the 5 days of the camp
- Materials Science, Physics, Environmental Science, Engineering, and Chemistry
- Provides hands-on experience with a variety of interesting experiments



# Physics Day

- Performed several physics demonstrations
- Bernoulli/Coanda effect, Van De Graaff generator, monkey hunter, lead brick
- SOCK laser activity



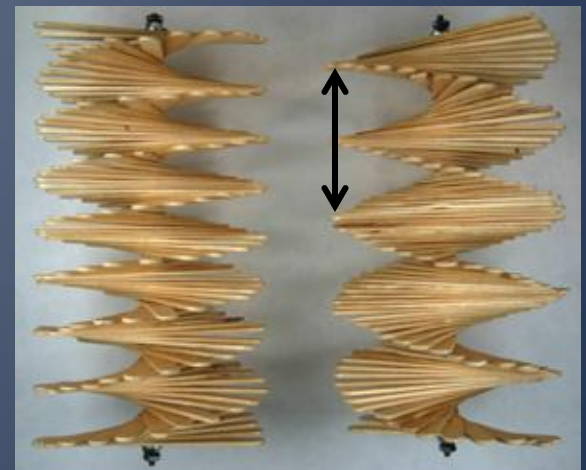
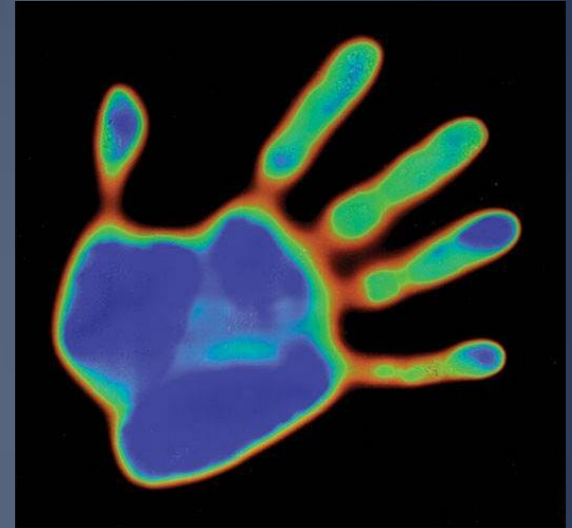
# Nanoscience Camp

- Middle school camp
- Kids are exposed to a variety of new concepts in nanotechnology
- A connection is made between the macro scale and the nano scale



# Liquid Crystals

- Liquid crystals are made from cholesterol
- They behave as a liquid but the molecules keep a certain orientation, much like a crystal
- They form spirals that become shorter with a higher temperature and longer with a lower temperature
- Different colors of light are reflected according to the distance between the spirals



Warm

Cold

# Acknowledgments

## SPS

- Gary White
- Kendra Redmond
- Tom Olsen
- Tracy Schwab
- Doug Dalton

## AIP

- Jack Hehn

## MRSEC

- Donna Hammer
- Alex Prasertchoung

Thanks for a Great Summer!

