

“I think I got it, but just in case,
tell me the whole thing again
(I wasn’t listening).”

-Emmett from the Lego Movie

<https://www.youtube.com/watch?v=YkF0aDaRomo>

560.201 / 530.201 Statics & Mechanics of Materials

- FACT:

- While they may have been listening, 130 Students from 4 engineering departments have a lot going on between the time they hear lecture material in class and write their lab reports related to the lecture material

- PROBLEM:

- Week 1: Present lecture material relevant to lab
- Weeks 1 & 2: Students perform lab related to lecture material presented in Week 1
- Weeks 3 & 4: Students submit lab reports related to lecture material presented in Week 1
- RESULT: some students are writing lab reports about content introduced in lecture >3 weeks earlier

- SOLUTION:

- Simulations of labs (using Finite Element Models) and a recap of relevant lecture material is provided on Blackboard so that students can review the lab and the material needed to write their lab reports.

Beam Bending

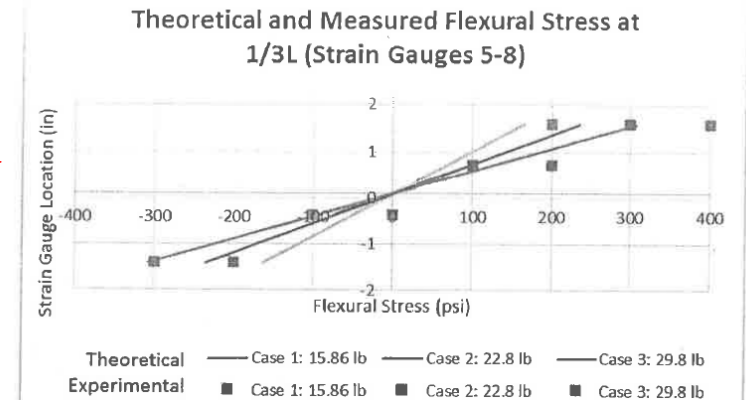
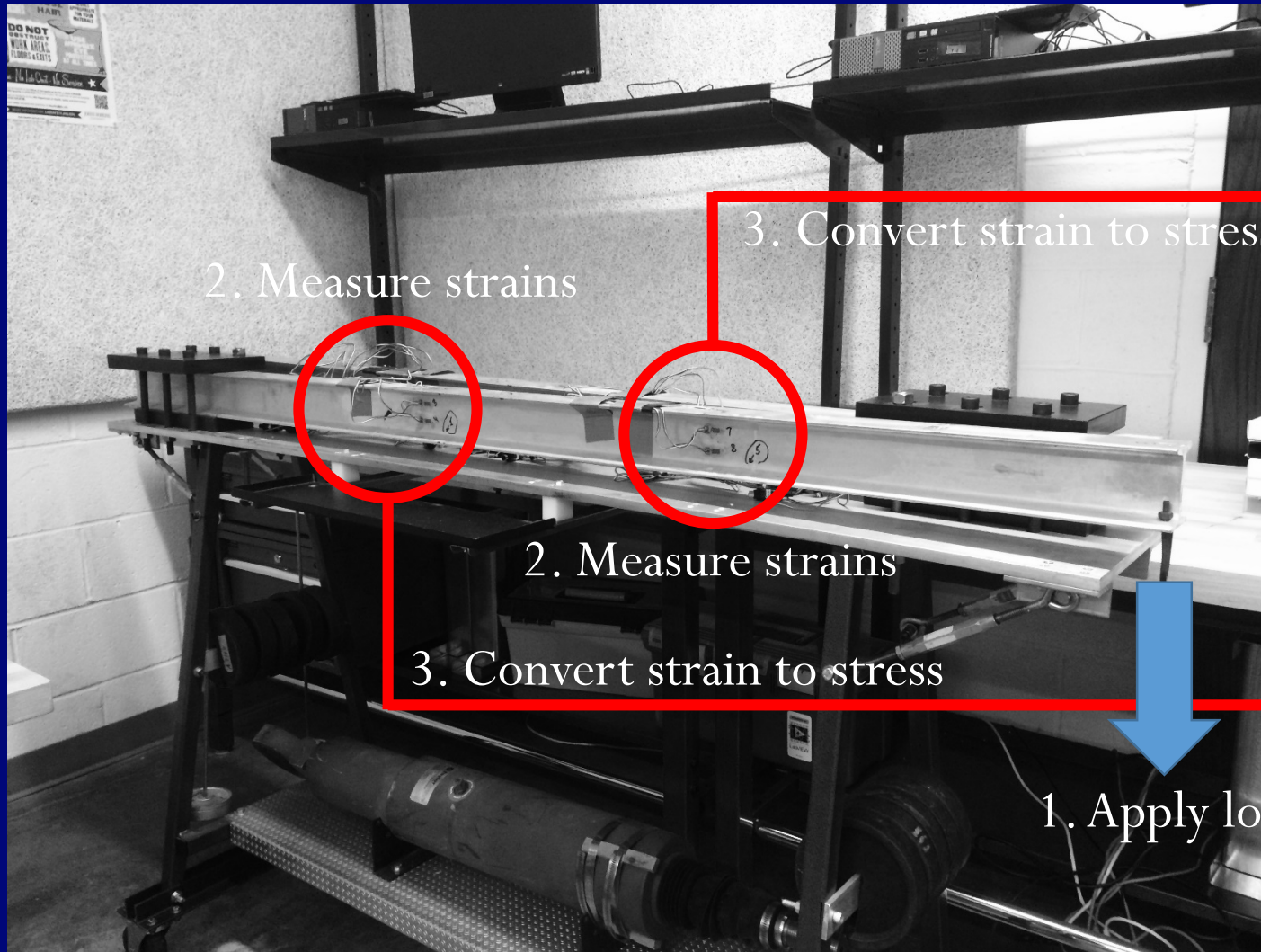


Fig 4: Plot of Theoretical and Measured Flexural Stress in Strain Gauges 5-8'

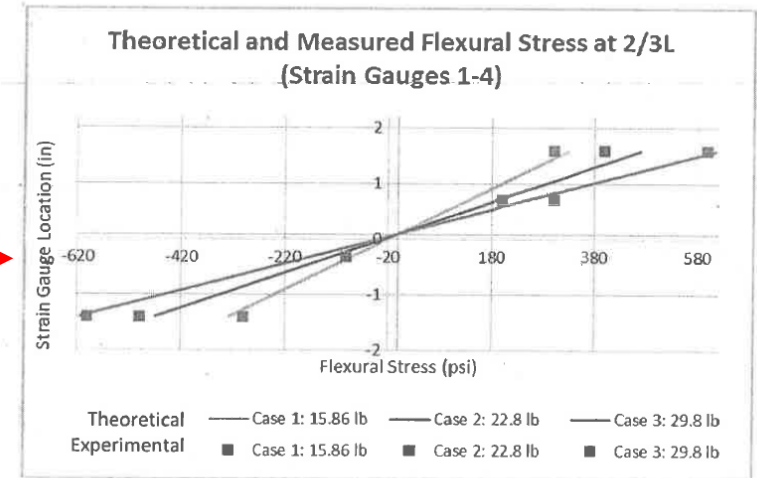
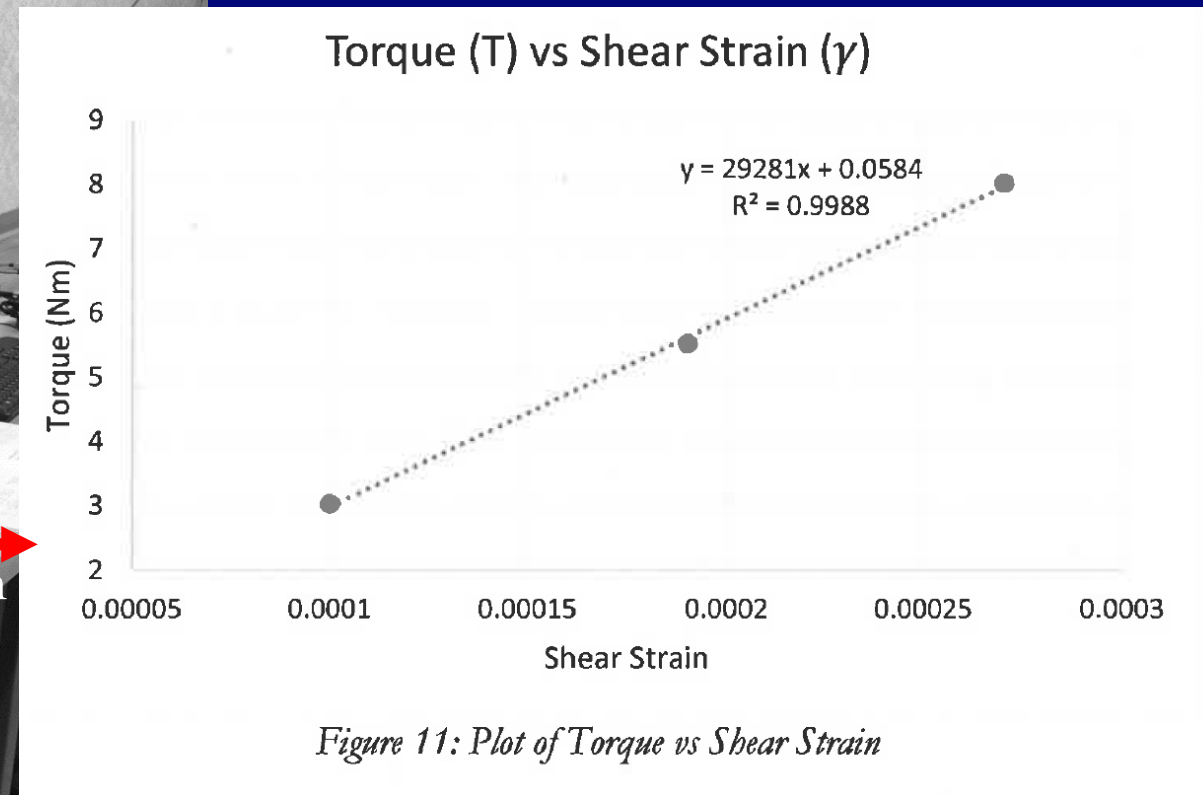
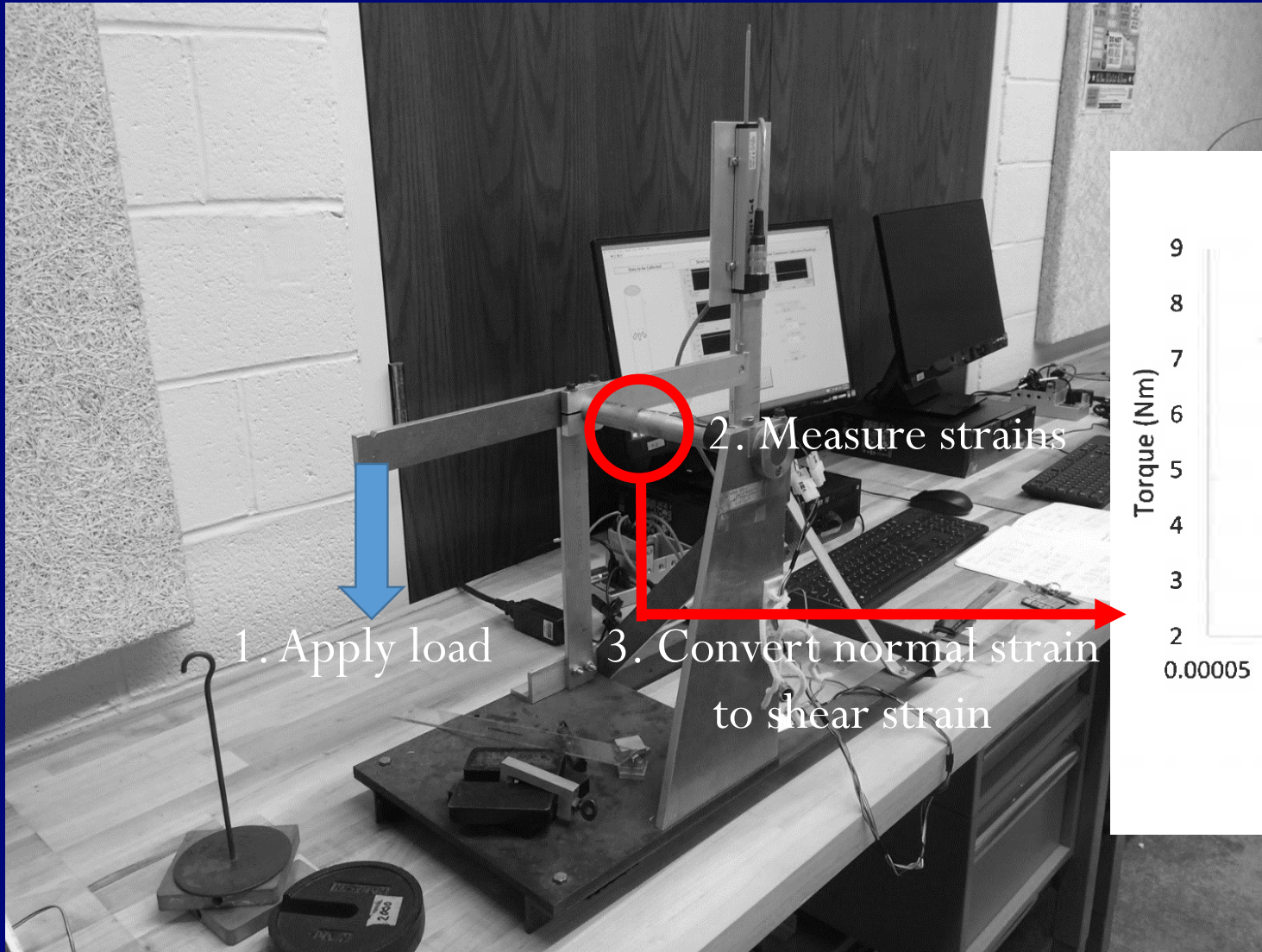


Fig 5: Plot of Theoretical and Measured Flexural Stress in Strain Gauges 1-4

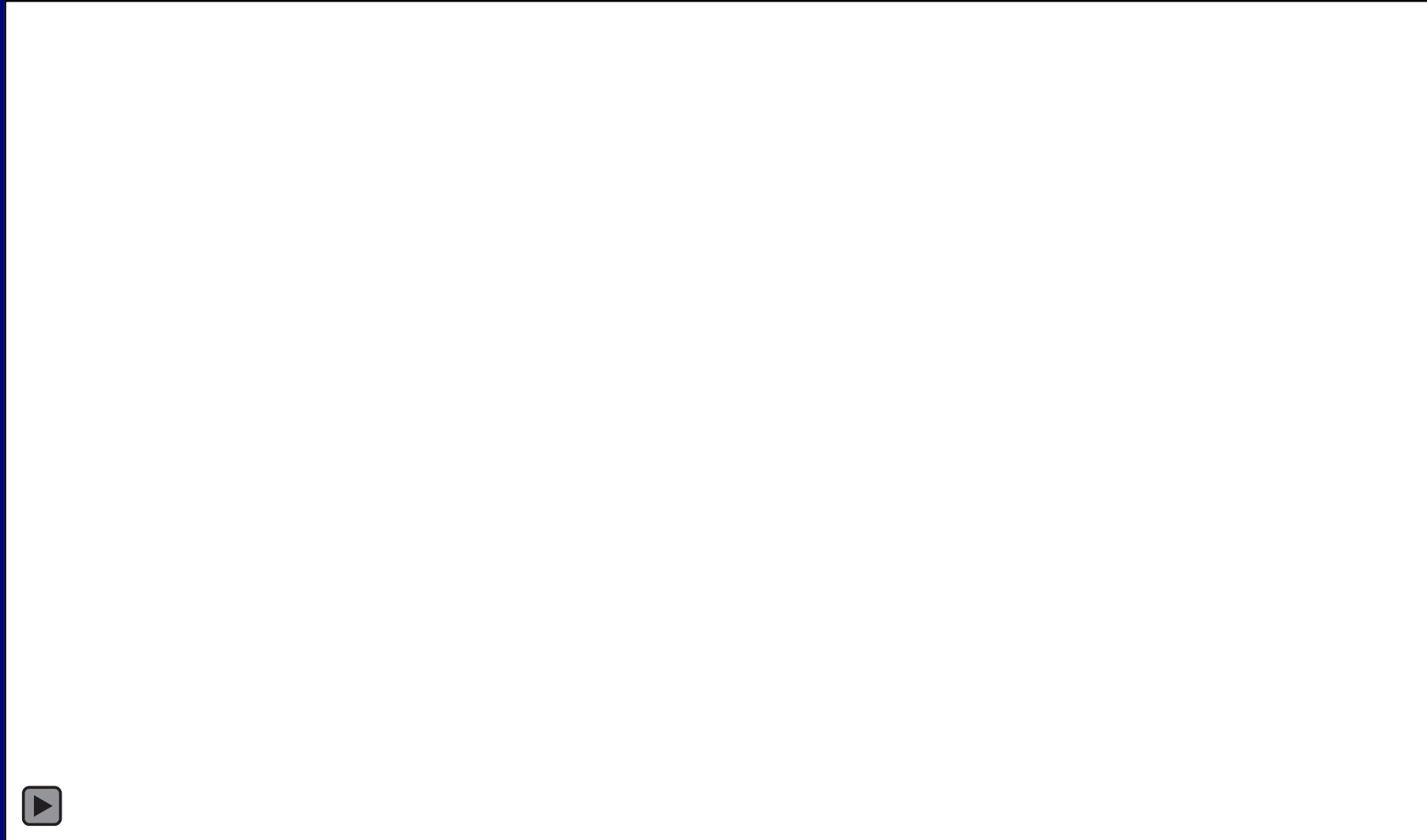
Beam Bending



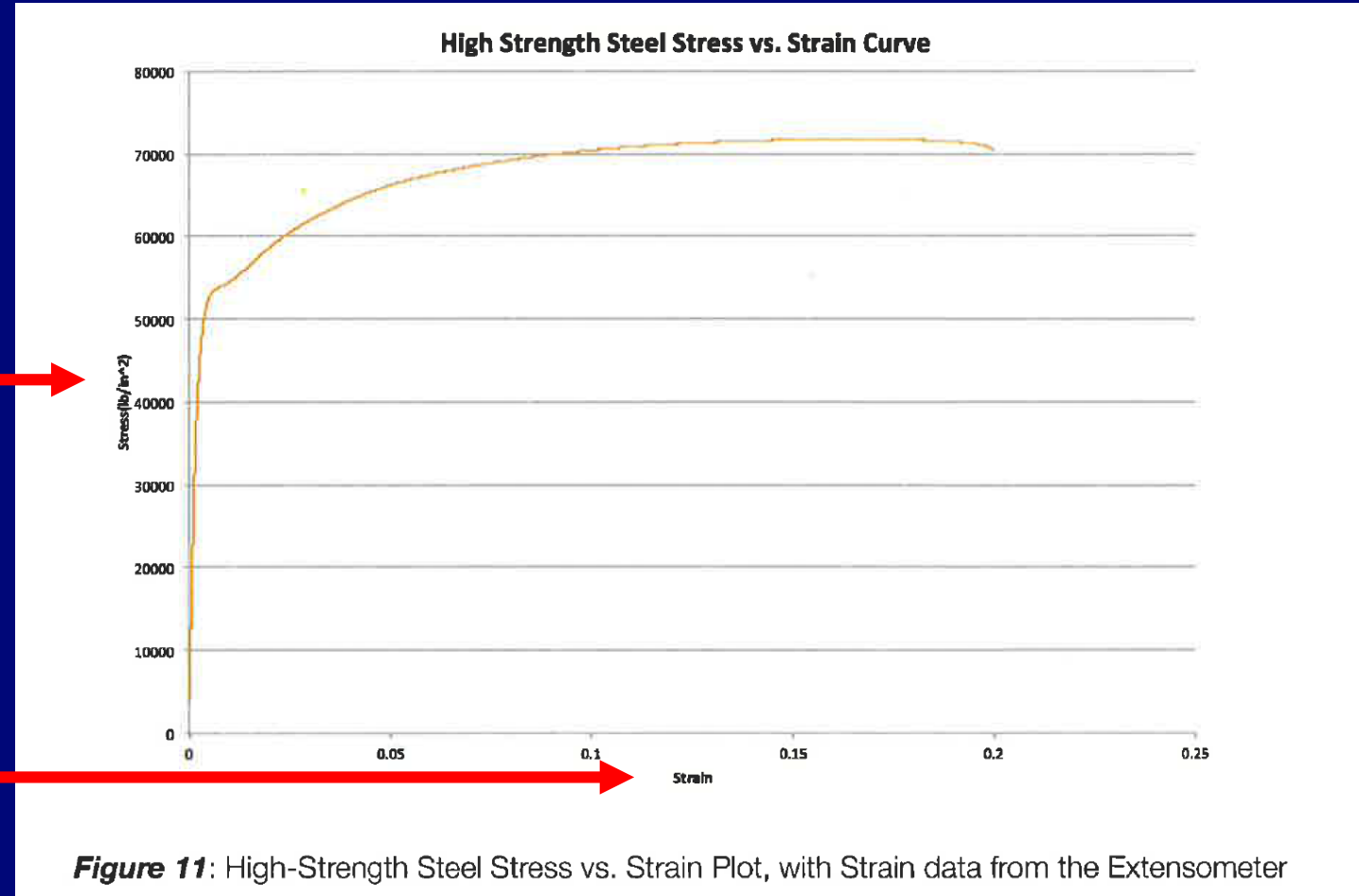
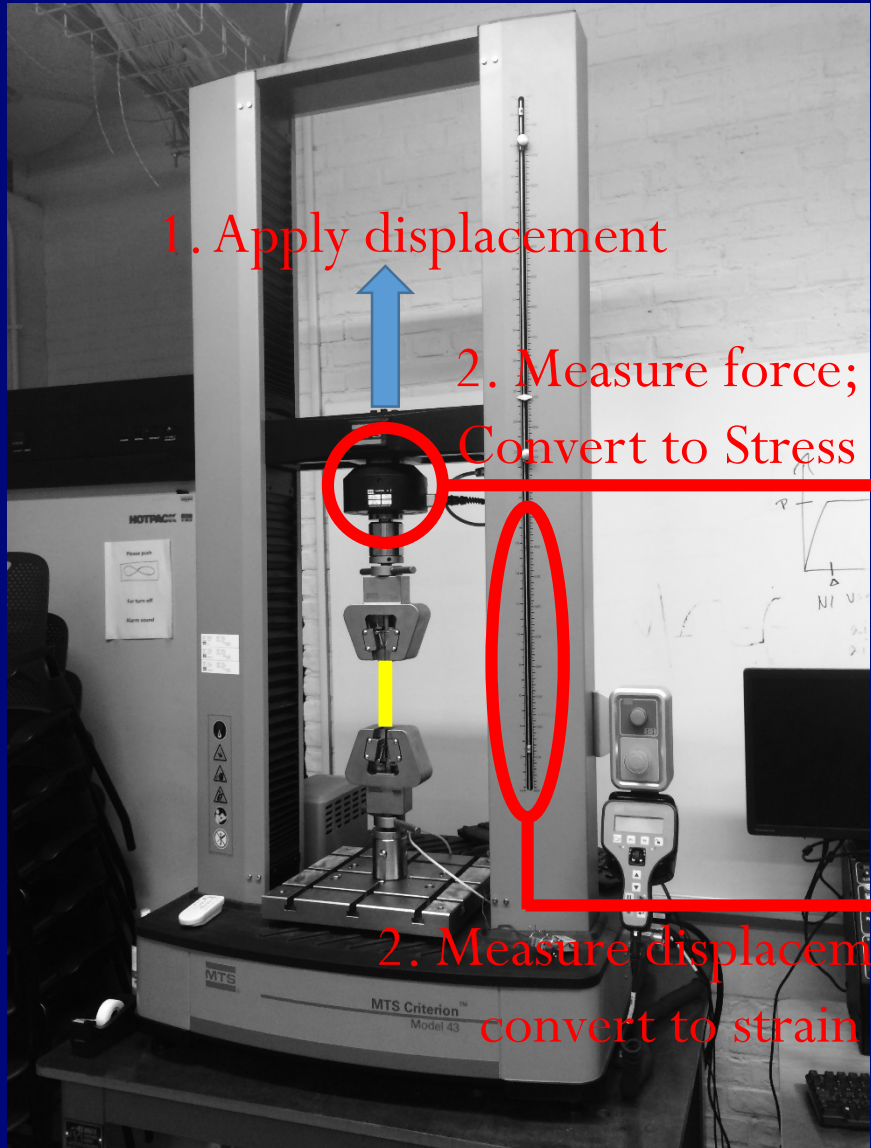
Torsion



Torsion



The Tension Test



The Tension Test



This all would have been a pipe dream
if not for...

A Technology Fellowship Grant from the CER
&

A dedicated Tech Fellow, Mikhail Osanov