



# Musculoskeletal Biomechanics

BIOEN 520 | ME 527

## Mini-Lab 2

Grant Writing  
and the Final  
Project

# “Brain Teaser” ...

If you have a 100kN load cell, what's the difference in sampling resolution between a 12 bit and 16 bit DAQ board?



12-bit =  $2^{12} = 4096$   
discrete samples...

**2.441N**

16-bit =  $2^{16} = 65,536$   
discrete samples...

**0.153N**

# Grant Writing...

[Q]: What's a grant and how does it differ from a contract?



# Grant Writing...

[Q]: Who funds grant applications?

- **Federal Government** (NIH, NSF, CDC, ...)
- **State Government** (WSDOT, DOH, ...)
- **Private Foundations** (CDRF, Snell, ACS, ...)
- **Industry** (Synthes, Spinal Dynamics, ...)

[Some are investigator initiated, and some are based on RFPs...]

# Grant Writing...

[Q]: What do most grant applications have in common?

They tell a (compelling) “story”...

- |                         |               |
|-------------------------|---------------|
| – What you hope to do   | Specific aims |
| – Why it’s important    | Significance  |
| – Who will do it        | Biographies   |
| – How will you do it    | Research plan |
| – How much it will cost | Budget        |
| – When it will be done  | Timeline      |

# Grant Writing...

## Keys for a successful grant...

- Follow the directions! (...don't skip anything)
- Form a strong team
- Pilot data always helps! (...may not be req'd.)
- Hypothesis-driven
- Build on what you've done (...“P”-word ok)
- External reviewers (...friends/colleagues)
- Don't be late!

# Final Project...

Discuss handout...