Math---The Language of Engineers

Presentation by Stan Żak for MATH 108 on October 14

In this presentation, we first look at examples of pure math problems posted on the web-site of the Clay Institute of Mathematics,

<http://www.claymath.org/millennium/>

We next look at 14 grand challenges for engineering in the 21-st century identified by the National Academy of Engineering,

<http://www.engineeringchallenges.org/cms/8996/9221.aspx>

We will show how math can contribute to solving these challenges by showing how simple engineering problems can be represented as optimization problems that can be solved using math that we study in our courses. Finally, we will glance at a more ambitious problem related to human health and show how optimization can be used to find a therapeutic strategy. This will be based on the paper posted at

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2613527/?tool=pubmed>