

Quantitative Ranking of Options for Material Selection*

- **Objective:** develop a rational method to select the best material for an application based upon known material parameters and the requirements of the application
- Use a 5-step method
 1. Select a quantity, Q , to minimize or maximize
 2. Classify the variables
 3. Determine the relationship between the geometry variable, the requirements, and material properties
 4. Determine Q as a function of requirements and material properties
 5. Rank candidate materials based upon function f_2

* Based on N.E. Dowling, *Mechanical Behavior of Materials*, section 3.8