GIFTS - First Year Engineering collaborations with traditional engineering departments to introduce students to foundational concepts through hands-on laboratory exercises

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Purpose of the GIFT

• Exposing students to different engineering disciplines.
  • Material Science with the creation of the spring from polymer 6,6 (nylon fishing line) by rotational force
  • Biomedical through heat treatment to create artificial muscle
• Collaboration with traditional engineering departments
• Create a new hands-on labs
Required Materials

In this example, the materials required were as follows:

I. Drill
II. Drill Stand
III. Polymer 6,6 (Nylon fishing line)
IV. Heat Gun
V. Thermometer
VI. Meter Stick
VII. Weights
Implementation Guidelines

General:
• Ample time to collaborate with the department of interest in the development as well as testing/piloting of labs.

Specific:
• Students had to exercise caution with the use of the heat gun
  — Move heat gun along spring at 2in or more away when creating the artificial muscle.
Future Work

• We are encouraged to continue collaborating with traditional engineering departments to create more hand-on labs
• Create a robust framework to assess direct impact of hands-on labs in career choice,
• feed into other major selection research being done in the department
Thank You!

QUESTIONS??