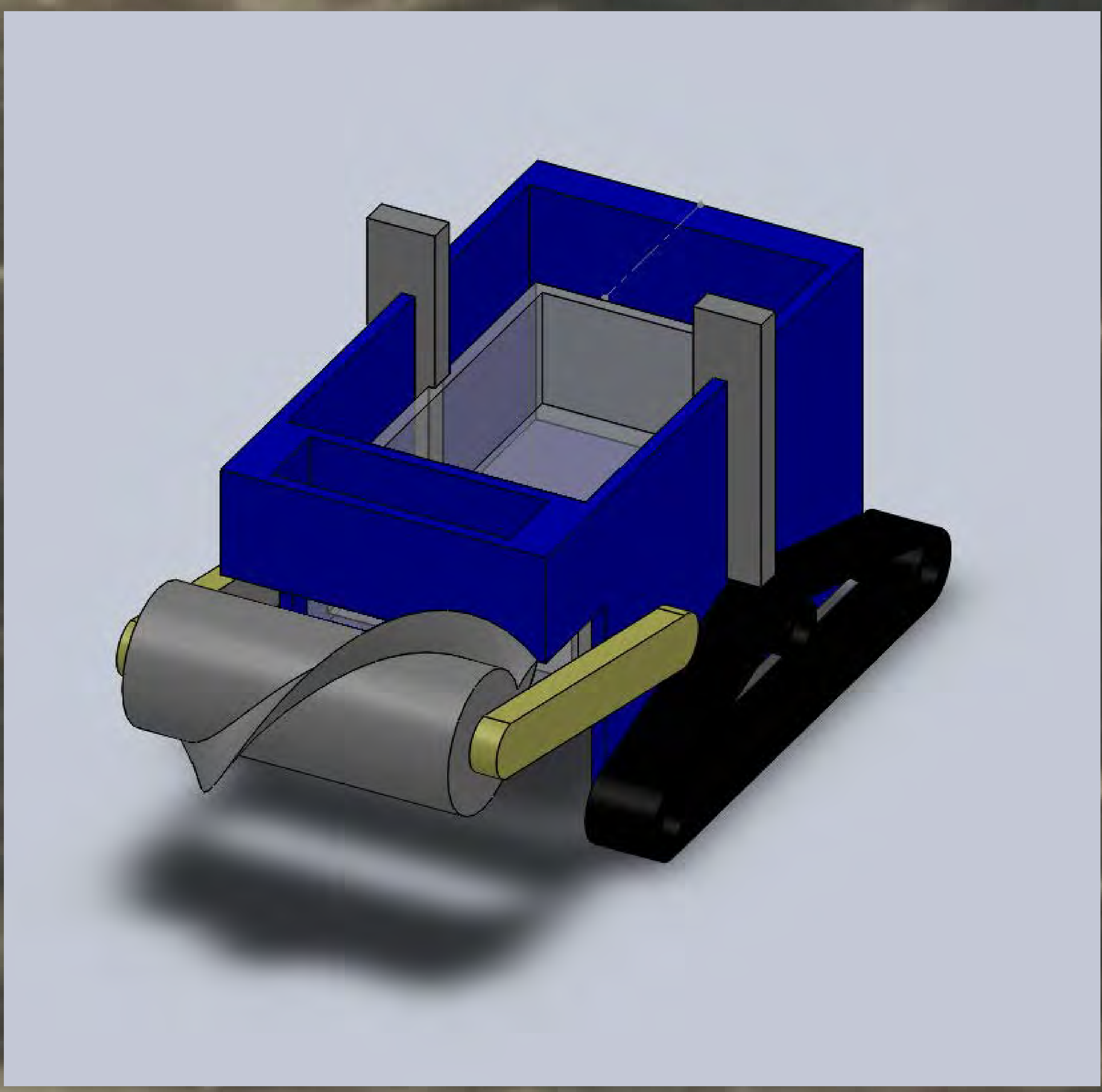# LUNAR MINING ROBOT

Problem Statement

To design and build a robot for NASA's Lunabotics competition in order to test our capabilities in robot building as well as competing and winning the Lunabotics competition.

Motivation

- To stimulate interests in science, technology, engineering, and mathematics.
- Explore innovations in autonomy

Objectives

- Excavate lunar soil, "BP-1"
- Traverse difficult terrain
- Deliver payload to competition receptacle, with a minimum of 10 kg of BP-1

Constraints

- Max. Mass: 80 kg
- Max. Dimensions: 0.75 m width x 0.75 m height x 1.5 m length
- Max. Average Bandwidth: 5 Mbps

Testing

- SolidWorks Simulation will be used to analyze excessive stresses
- Simulation of competition arena will be done
  - Crater filled terrain
  - Excessive dust environment
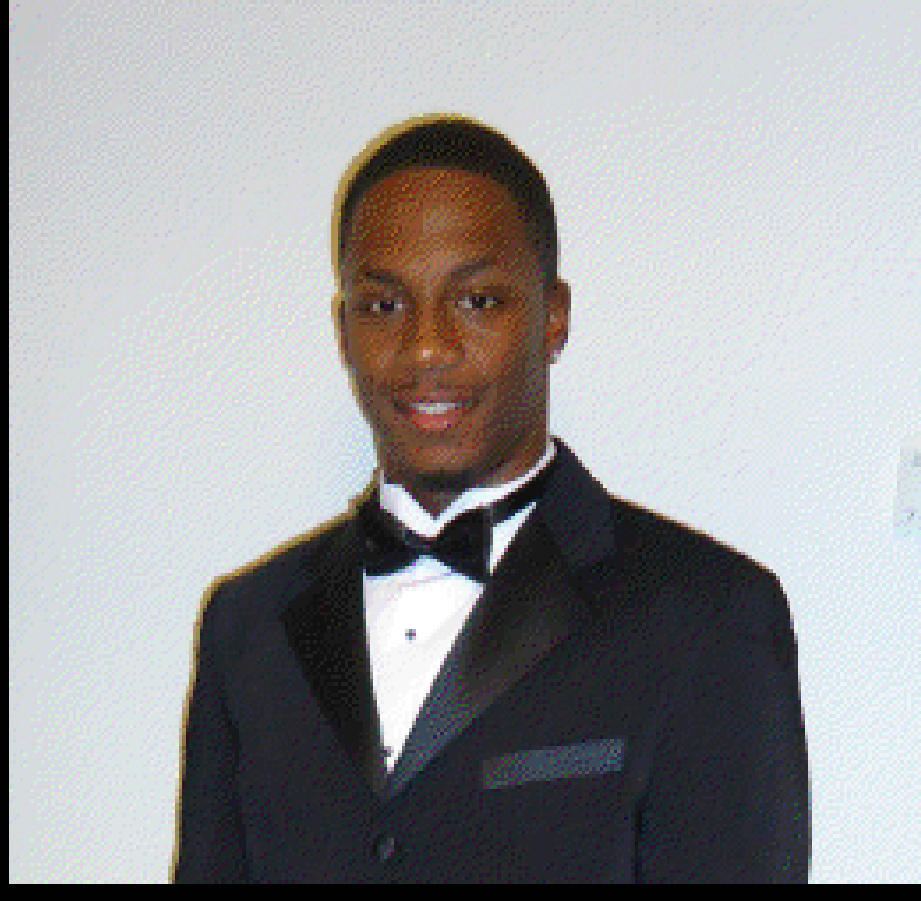- Autonomous solutions will be sought after
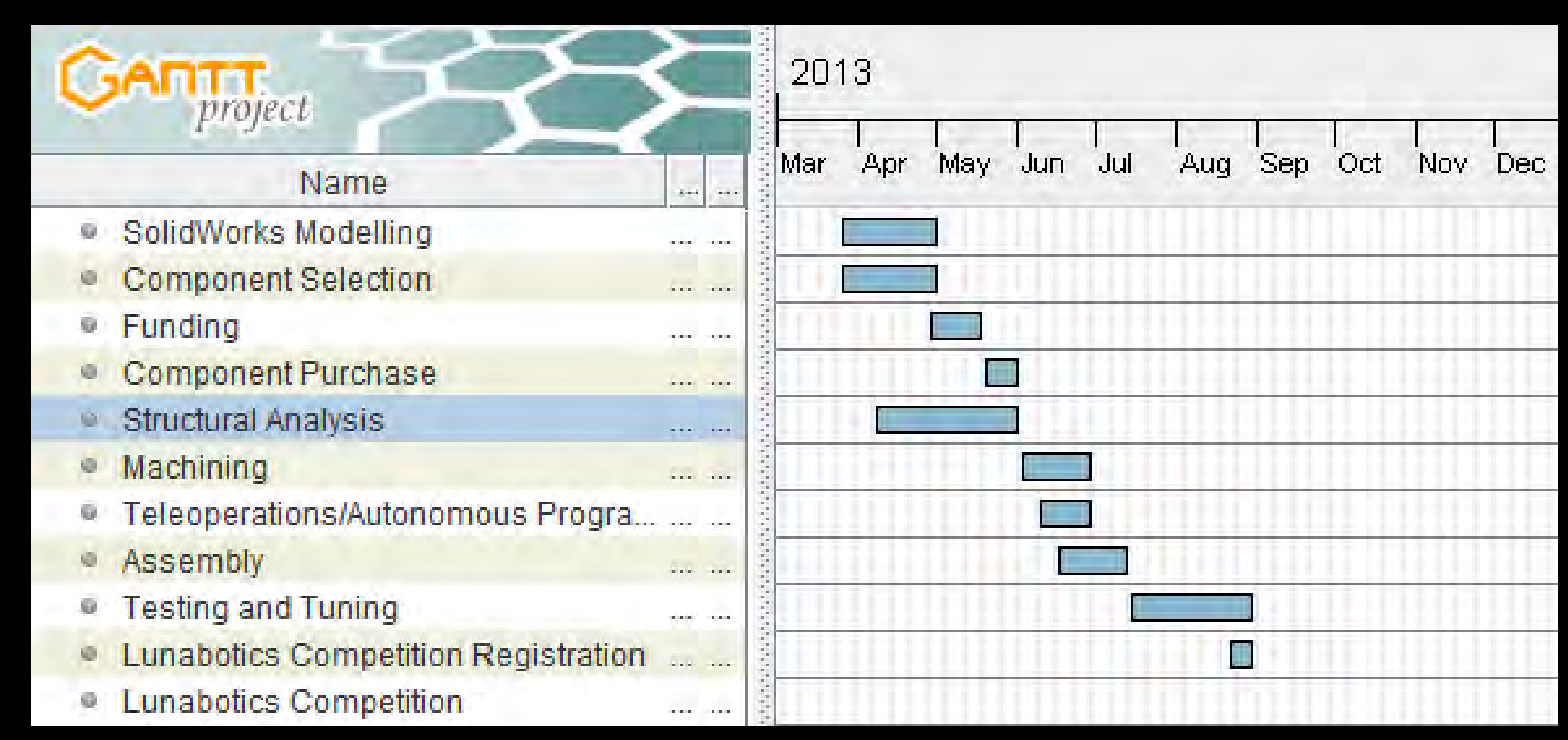
Dr. Sabri Tosunoglu
Melissa Morris

Zhen-Hua Wang   Michael Sewar   Mark Tuazon