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| **Project Title:** | Robotic Finger Force Measurement System |
| **Team Members:** | Drew Morrow |
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| **Faculty Advisor:** | Dr. Bongsu Kang |
| **Area:** | Mechanical Engineering |
| **Sponsor:** | PHD, Inc. |

PHD, Inc. is dedicated to improving the way other companies manufacture products, by supplying innovative equipment. PHD has been in the automated manufacturing design field since 1957. PHD has developed over 35,000 unique designs for various companies. The next product PHD plans to bring to the market is a gripper system based on the human finger which is of interest for this project. PHD is seeking assistance with creating a way to accurately and reliably measure the normal forces produced by each pad of their new finger module. The designed system is required to measure normal forces of up to 30 lbs while maintaining a tolerance of 0.1 lbs. The designed system must work regardless of what position the finger module is in. The test fixture also must take measurements at various locations across the grip pad up to .050 in from the edge of the pads. As for the reliability of the system, PHD is requiring the design to remain precise for at least 10,000 measurement cycles. Since PHD intends to offer customizable equipment to other companies, the system must also be able to accommodate variations in the finger module such as the number of segments. The budget for completing this project is $500.