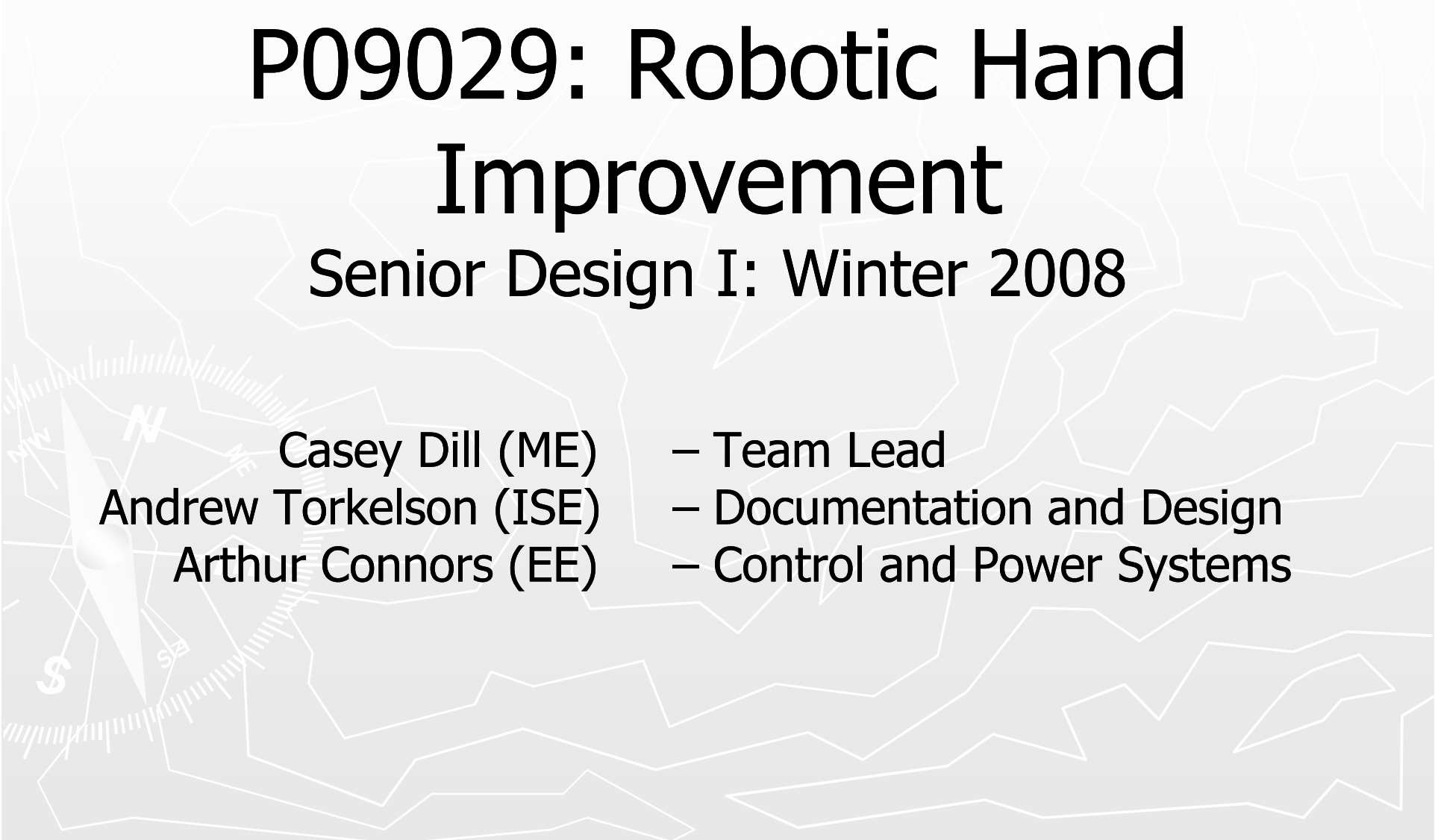


# P09029: Robotic Hand Improvement

Senior Design I: Winter 2008



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- Team Lead
- Documentation and Design
- Control and Power Systems

# Mission Statement

- ▶ This project is the fourth generation of the artificial limb. The first generation created a 3-fingered hand, the second generation create a hand that could grip and the third generation created a 5-fingered hand. The final goal of these projects is to have a robotic arm with the ability to scale down for microvascular surgery or scale up for hazardous construction applications. The point of using a robotic arm for these applications is that by using a glove to control the robotic arm, it will be simple and intuitive to control, thus not adding to the burden of the controller.
- ▶ This project's primary goals are to create a computer simulation of joints used in making air muscle-based robotic arms that can interface with the controls system and predict the forces. To ensure the accuracy of this simulation, joints will be made and compared to the computer model.

# Key Challenges

- ▶ Accurate motion
- ▶ Control of non-linear actions
- ▶ Integrating with past designs
- ▶ Robust enough for future integration
- ▶ Further funding might not be found, limiting the scope of the prototype
- ▶ No one on the team has a strong biomedical background, increasing the amount that the team needs to learn as the project progresses