# Conclusion

During the fall phase of the project a feasibility study and background research was conducted on robots with a similar scope. A set of criteria and specifications was developed, and four robot designs were drafted to meet the specifications. A final design was selected as a team by use of a decision matrix.

In the current phase of the project multiple simulations were developed to calculate the subsystem specifications to prevent failure during operation. Initially a dynamic simulation was created to calculate the required torques and internal forces felt at each joint during motion. These worst case scenarios were then passed through a finite element analysis to enhance the leg design. They were also passed into the motion study and pneumatic simulators to create specifications for the pneumatic circuit, such as maximum pressure and flow rate required. Finally, these specifications were used to select mechanical, pneumatic, and electrical components.

During the final phase of the project the robot will be assembled and the control architecture will be developed. When the parts arrive a prototype leg will be constructed to test run the control algorithms while the other robot subsystems are constructed. When the full robot is finished the control algorithms will be tested by moving a single leg while the other three remain stationary, allowing the robot to pull itself across the ground. Finally, if time permits, additional gaits will be programmed and optimized into the control architecture.

A project schedule, in the form of a Gantt chart, is given below: