The Problem

- The Amherst College Athletic Department is currently using Catapult GPS units to monitor the performance of its athletes
    - The wearable units track metrics such as Total Distance, Top Speed, Total Sprint Distance, and Power (among many others)
- The Strength and Conditioning team is currently in charge of managing the data and presenting it to coaches/trainers
    - They lack an efficient means to both organize and engage with the data

Our Solution

- Create a web-app/interface that uses recorded GPS data to provide varsity coaches, athletic trainers, strength and conditioning coaches, and athletes themselves
    - This product will shape how Amherst athletes continue to train, recover, and perform and provide unprecedented insight to coaches
- The interface will display individual data as well as display overall team performance and metrics with graphical and numerical summaries

The Data

- To break it down by the numbers:
- For one session, an individual GPS Catapult tracker records >10 meaningful performance-related metrics (i.e. distance ran, distance sprinted, top speed, distance / min, etc)
- The following teams are currently using the product to keep data on their athletes:
    - Men's/Women's Soccer (Fall 2023)
    - Men's/Women's Lacrosse (Spring 2023/2024)
- With almost 100 athletes actively tracked by GPS Catapult software in every training session and game throughout their season, we will have access to thousands of data points from which to provide the athletic department with performance analytics

Next Steps and What We Need to Figure Out

- Design and plan the web-based interface in a manner that is easy for users to navigate and comprehend relevant data
- Automate the entry of new data such that app and database stay synchronous with new real-time data
- Automate an emailed report to coaches evaluating the rigor of prior training days and advising load for the current day based on that

- What additional metrics can we obtain by categorizing and combining the already existing data?
- Figure out relevant technologies to use on the backend and frontend
    - At the moment for frontend, we are thinking about using React with Tailwind CSS
    - For the DBMS, PostgreSQL (though we don't really have enough knowledge of database tech yet to have an informed opinion here)
    - We plan on consulting Matteo for advice in this regard
- Consider incorporating NCAA/school-tracked stats (goals, assists, fouls, cards, etc.)

Preliminary ER-Model