**Problem Statement & Our Solution**

* There exists a problem in allocating learning resources to low level learning objectives
  + Remembering, understanding, applying
* Difficult for students in introductory classes, specifically in stem, to find accurate information for their classes
* Solution: provide a resource for students to easily access specific answers and resources for their questions, specific to their individual class at Emory
  + We tested this on BIO 141 and 142
* Created a knowledge graph connecting resources provided by Dr. Skye Comstra at Emory (Youtube Vids, Textbook, Canvas Slides) through an LLM with specific learning objectives and topics provided by her.
* Created a User interface web app for students to easily access the material.

**Methodology**

* Pre-Processing of Various Learning Resources to be converted into vector embeddings
* LLMs to generate 10-12 simulated questions a student will have about a given learning objective → converting these into embeddings, comparing cosine similarity of the learning resource to the query, returning the top 4 most similar per generated question
* Drawing an edge between a given learning resource and learning objective by the top 4 most returned documents

**Conclusions**

* Cutoff metric
  + Instead of pulling top 4 documents, pulls any number of docs that exceeds a certain cutoff point (like 0.75 relevance, as in how similar the text is), so that it doesn’t return low relevance documents, but can also return more than 4 high relevance documents
* Upgrading GUI, hyperlinks, turn into chatbot
* Matching new queries to existing queries
* Automating edges
  + Pitfalls
* Apply to new courses and institutions