**Project Overview:** Often students enrolled in courses that apply conceptual math topics across various fields have limited options for getting assistance. Textbooks, online resources, and meetings with faculty during office hours are the common choices.

The Peer Perspective (PEP) offers a comparison of individual perspectives in the methodology of students and professors, and experts in the application of the conceptual topics, in order to improve an individual’s understanding of concepts. Where current resources give students another individual’s perspective in learning concepts, the PEP allows for a more interactive method of learning for a student. A student or professor has the ability to author in problems that are believed to be difficult, once the problems are authored in both the student and professor solve the problems, while having their eyes being tracked by the eye sensor. PEP will be comparing the two perspectives once the data from the sensor has been processed. In identifying key differences between the two perspectives, especially the solutions, the goal is to pinpoint where the student starts to stray from the path of correctly solving the problem. This will help students and professors learn where the student’s application and understanding of concepts falters. To allow for a much more engaged learning process for a student, while also fostering their ability to visually connect components of a problem to concepts learnt in class.

With different user consoles (Professors, Students, Researcher) PEP will give different results. A professor is using PEP, has access to one on one results, as well common patterns across their students and will be able to annotate areas that show concern. In the hands of a student, along with having the one on one results, having the ability to annotate sections from the professor’s perspective gives the opportunity to raise questions regarding the steps the professor was using at the time. The researchers console will be collecting data all students’ data, allowing them to see the progression of how they improved over the passage of time.

**Intellectual Merit:** PEP focuses on supporting students in beneficial manner that allows professors to gain insight in how students go about applying concepts learned within class. Due to the use of an eye track sensor, an understanding of the software used and how to read/process output tracking files is needed. In collecting a group of students’ data over a period of time, a storage system is required. The process of comparison and analysis over solutions relies on machine learning techniques to learn what exactly merits a key difference between perspectives based on various variables given by the sensor, All of this ties into the development of PEP.

**Broader Scale:** PEP has the potential to be able to identify common patterns across various fields and identify where it is they get lost. Think about having physics problems where people are struggling with the question and then someone doesn't understand how to solve a problem and this class has like 200 students. Doing proofs in a math class often times people will come up with different solutions because they go about solving the problem differently. In using this program you would be able to determine where exactly this student was looking at when they were solving the problem. Now imagine these are done in small scales but what if a study on a grander scale with a larger user base would there be patterns that would show up? Would there be perspectives that would show up more frequently? If such patterns are present, PEP will be able to identify where and why people ended up confused.