In the fall of 2008 the PI completed a research project which was sponsored by the National Science Foundation (NSF). The Mocap ASL in the Sciences project used motion capture to record 60 science-related signs in 3D format using Motion Capture techniques. Motion capture is a method used in the entertainment industry to animate 3D characters in extremely lifelike fashion. Several teams have started using such 3D animations and motion capture techniques for the production of American Sign Language animations, but little research supports the use of animated characters in ASL products. The 3D animations have several advantages, including interchangeability of characters (the same signs could be placed on virtually any character), complete control over the background and clothing colors, and huge savings in storage requirements without sacrificing quality (in theory).

The research project compared the 3D animations to the same signs in a 2D format. Approximately 30 deaf middle school and high school students used a pretest (tutorial)/posttest design to compare prior knowledge with knowledge after exposure to the signs and their English meaning. During the quiz, students got immediate feedback. The number of repititions needed to score 80% was recorded. Overall, deaf students preferred 2D, but learned more effectively using 3D formats. The research design was not perfect and needs further investigation. The research also highlighted the need for improved production methods as well as the need to investigate ways to make animations more effecitve. During the course of the project, a list of vocabulary words needed for the Texas standardized science and math tests was created. Those words will be supported with signs, ASL explanations, images, lesson plans, and definitions. The signs will also be available in 3D format. The resources are now available for teachers and will be improved continually. Additional resources include libraries of 3D handshapes available for researchers, a library of motion capture data of approximately 500 ASL signs, and other programming resources. Purdue University did similar research, but focused on mathematics and creating educational games. The challenges the Purdue team faced and the Stephen F. Austin State University team faced have compelled us to attempt a collaborative research project. The goals of the project will be outlined.