

# NASA CT SPACE GRANT CONSORTIUM

## HASP ( ROBOTIC ARM )

Dr. Jani Macari Pallis, Dr. Neal Lewis, Mr. Larry Reed, Mr. James Pallis, Mr. David Mestre, Bashar Alhafni, Sam Zhang, Phill Carroll, Josh Hauge, Maheshwari Kumar Rakkappan, Karan Kakanur patel, and Rothen Krishna Thashanath sajeevan.

University of Bridgeport

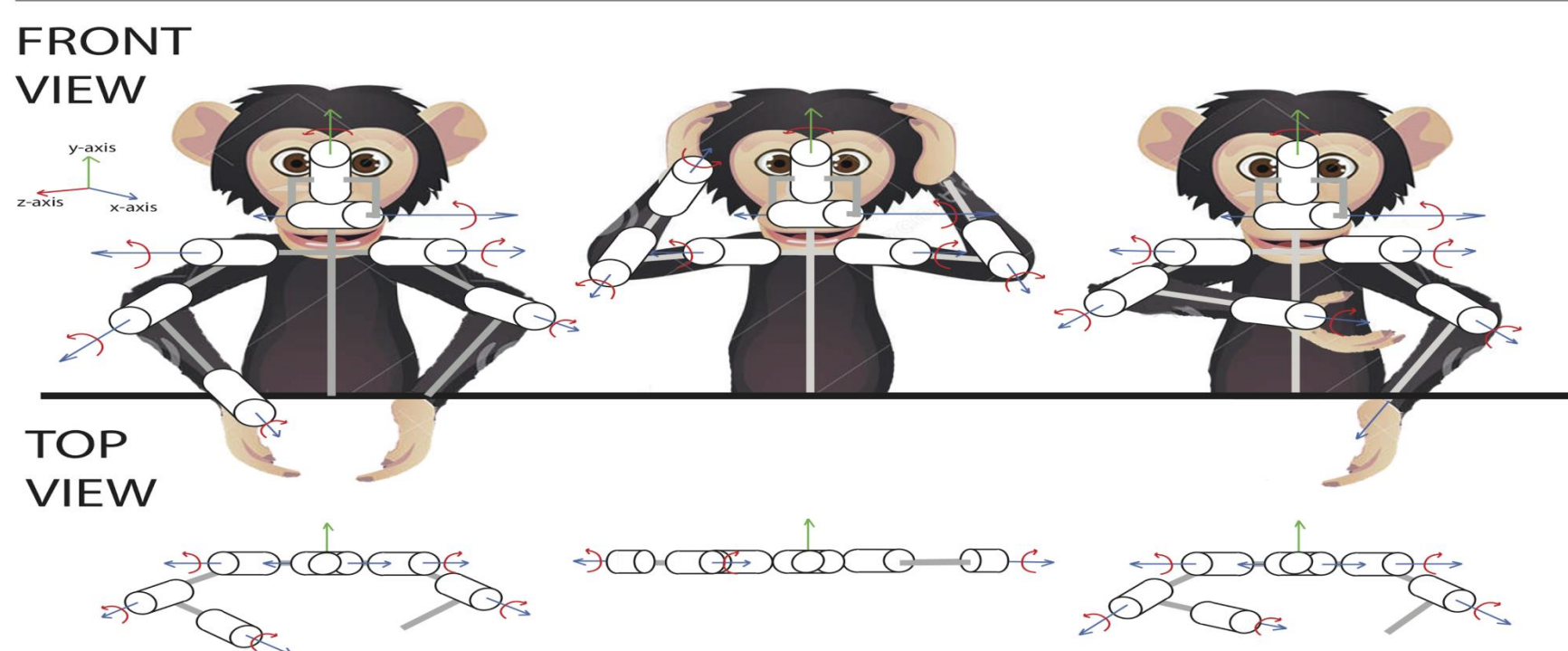
### INTRODUCTION

In January 2015, Connecticut Space Grant awarded UB a seed grant to develop a prototype of the robotic puppet. University of Bridgeport students from engineering and design school developed a robotic puppet which could move different angles and do actions like thumbs up, thumbs down and more actions.

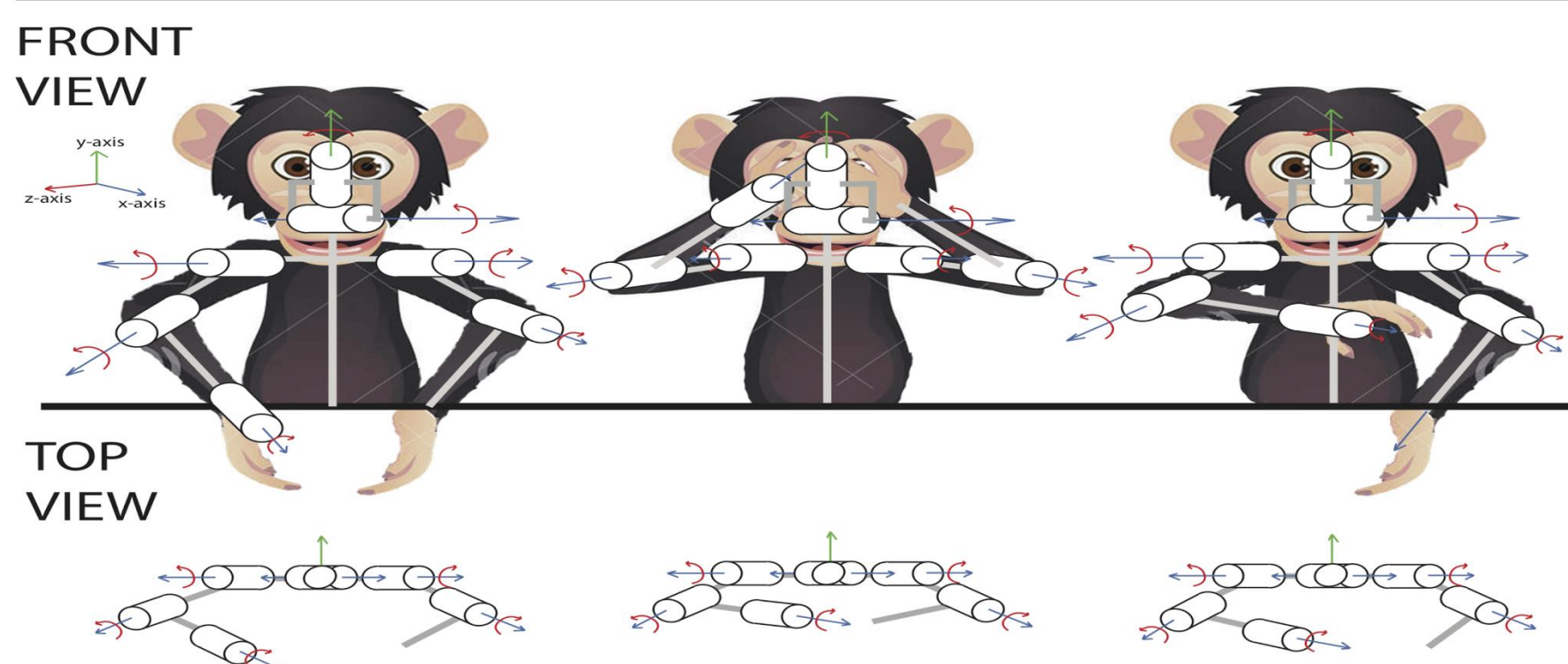
### HIGH ALTITUDE MONKEY

Current SASD senior student Phillip Carroll worked with Dr. Jani Pallis (UB Engineering) to create a variety of schematics for possible options of movement for HAM, including detail of the motors and the direction they turn.

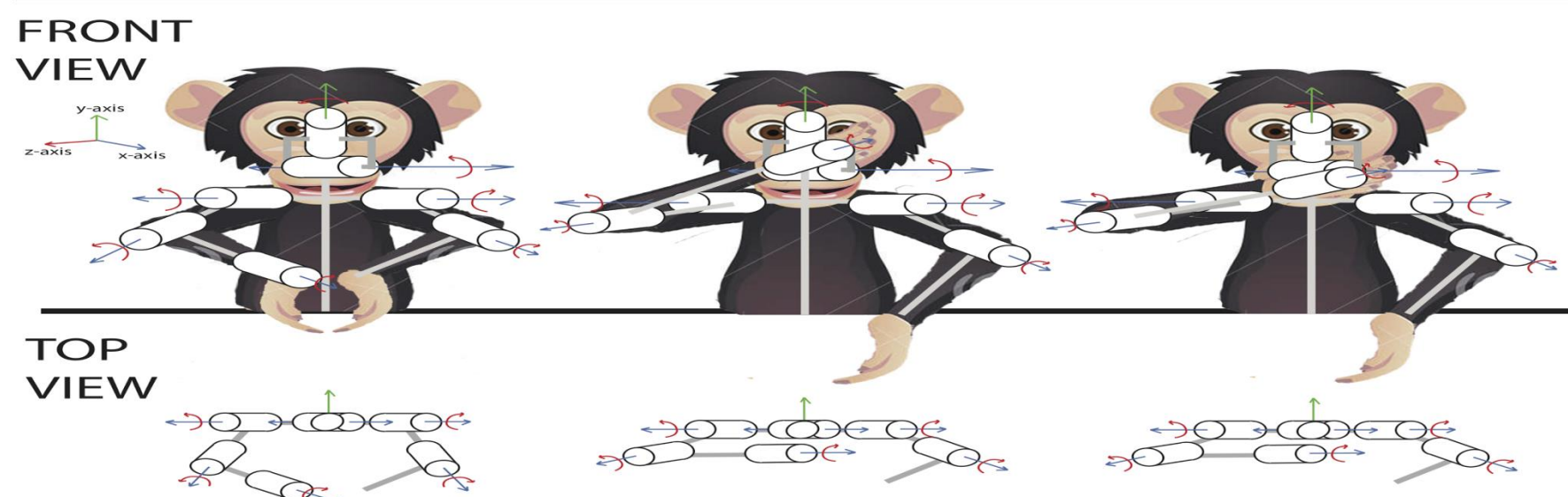
#### MONKEY MOTIONS BASE > COVERING EARS > THUMBS UP



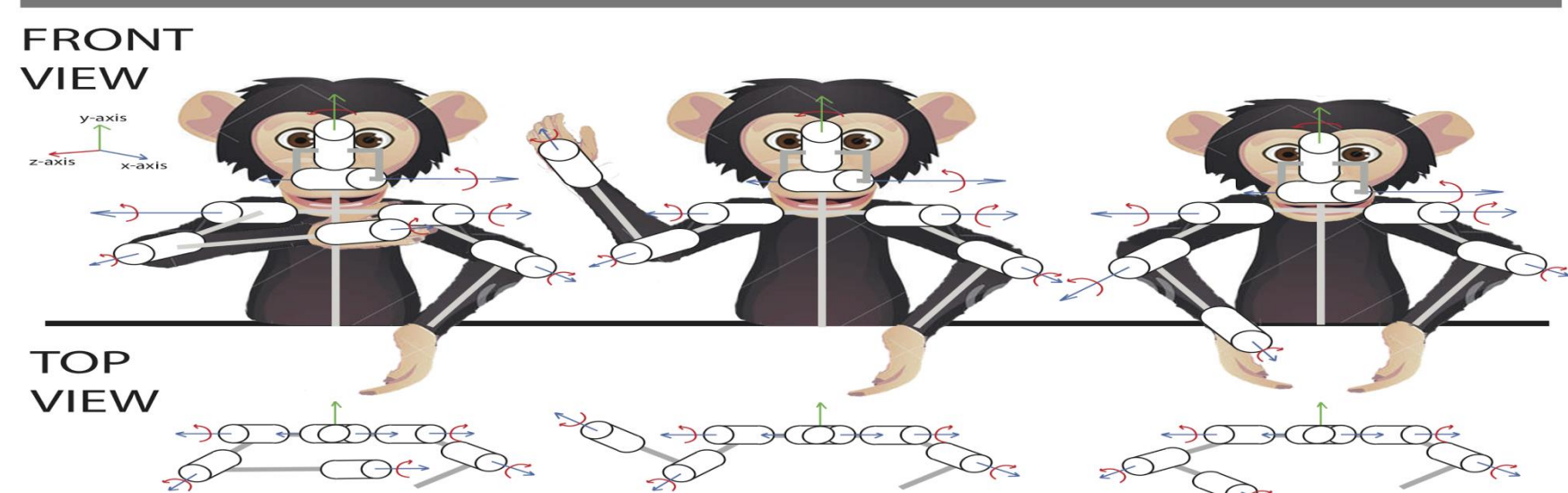
#### MONKEY MOTIONS BASE > COVERING EYES > THUMBS DWN



#### MONKEY MOTIONS > CLAPPING HND > CVR NSE > CVR MTH



#### MONKEY MOTIONS > CVR HEART > WAVING > LOOK @ CNSL



### ROBOTIC ARM

On September 1, 2016 HASP was launched from fort summer, New Mexico with 12 different university students payloads. The University of Bridgeport Sent a robotic arm to the space in that payload. It is a prototype for our future high altitude monkey project that can interact with the young students on the ground when it is in balloon flight.

The robotic arm has 3 servos and 1 little servo which can move left and right. The aim of the HASP project is to test the servos at very low temperature and in vacuum to determine the correct servo-motors for the well-scale robot model.

### ROBOTIC ARM IN HASP



### CONCLUSION

At launch, the test sequence are automatically started, commanding the servos to operate one cycle, at a time. The servos functioned well during the entire flight. The HASP reached an altitude of 122, 000 ft. The Float time was 15h:8min:54s. The data for the entire flight was collected.

This project will help UB students to continue the high altitude monkey mission .

### ACKNOWLEDGEMENT

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