Method to operate robots:
User: beagle
Password: cornell

1) Turn on Robot.
2) Open ssh tunnel to robot (robotxx.coecis.cornell.edu), login with above user and password. If ssh tunnel fails make sure you can ping robot. (Robot takes upwards of 60 seconds to fully boot and receive an IP address. Then run cmds:

```
cd beagleoncreate
sudo ./main
password if prompted
```

   then leave the ssh tunnel open. Diagnostic gets printed to screen, if program dies it will return to cmd prompt and you can restart main program if necessary. Kill program with Ctrl-C if it locks. Restart robot as last resort, reboot takes 1+ minute.
3) Open the Z:\ network drive and copy down the EYH_Maze_v2 folder to your desktop.
4) Open Matlab, (Note: MatlabToolboxiRobotCreate_v11 folder will already be added to the path.) In matlab change your current directory to the EYH_Maze_v2 folder you just copied onto the desktop.
5) Once in this folder, in Matlab Run the following where XX is the robot number:

```
Ports=CreateBeagleInit_v2('robotXX.coecis.cornell.edu',XX)
```

   If firewall alerts you please allow matlab to communicate through port it requests 8866, 8665, etc.

   Also note: `_v2` of `CreateBeagleInit` *supports controlling multiple robots from one computer, each robot needs its own instance of the Matlab kernel running and its own ssh tunnel.*
   (If you get an error, make sure you are in the EYH_Maze_v2 folder and that MatlabToolboxiRobotCreate_v11 is in the path and that the file CreateBeagleInit_v2 resides in that folder.)

6) Then run the Maze software by running:

```
EYH_Maze_Program(Ports.create)
```

7) The robot should beep and the program is now loaded. Diagnostic information is printed to the Matlab terminal during operation.

Method for connecting multiple robots to one computer:

Each Robot must have its own instance of putty and Matlab running on the host machine. If one robot crashes, you only need to restart the one instance of putty and Matlab that were directed at that specific robot.

If problems exist connecting to the robot, confirm it received an IP by the following steps:

1) Hook up RS232 serial cable to beagleboard onboard serial port.
2) Run putty or any serial comm program to correct comm port on your machine with 115200 buad (default serial comm settings).
3) Login to robot with user password, hit enter if nothing is initially printed on screen.
4) Once at terminal (cmd prompt for u windows users) type ifconfig
   Write down (like on paper) IP address for the ra0 adapter (this is the wifi port.)
   One may also use up and down commands to reset wireless adapter to refresh ip address assignment if there are problems connecting to wifi.
5) Unplug serial connection to robot.