

The teaching lab

The teaching lab in which the MagellanPro robot is located is in MRC 345. Access to the room is controlled electronically. Starting with Lab 2, you will be added to the access list.

Here are a few rules for using the teaching lab:

- No horseplay, particularly with or near the (expensive and irreplaceable) robot! You're all adults, so we'll leave it at that.
- The teaching lab is also used by other people, in particular graduate students in robotics are using it for office hours. Please be respectful, but also do not let anyone use the robot who is not associated with the class.
- Leave things as you found them! Pick up any trash and return furniture to its original location.
- When you leave, turn out the lights and make sure the door is closed and latched. The door to the teaching lab is a tough one: slam it shut and then test to make sure it has latched!

Using the robot

Unless another group is using it when you arrive, the robot should be situated in its charging station at the back of the lab. Follow these procedures for preparing the robot, controlling it, and finishing up:

1. On the log sheet that is hanging by the robot, write down the names of the members in your group along with the time.
2. Start up the robot using the following procedure. Do not worry if the robot is plugged in and/or charging:
 - (a) Depress the little black button on top of the robot
 - (b) Wait a while
 - (c) When the SONARs start up (you'll hear repeated a clicking noise), the robot is ready
3. Run your program:
 - The hostname of the robot is `magellanpro.robotics.cs.rpi.edu`. Your program can connect to the robot by passing the hostname to `mpro_connect`. (To use `mprogui` or `mproremote` with the robot, run them with the command line option `"-h <hostname>"`.)
 - E-stop: the big red button on top of the robot is the emergency stop button. **Someone should always be within striking distance of the E-stop button!** If the robot is dangerously close to a wall or other solid obstacle, *stop it*. Don't wait to see what happens.
You should not rely on being able to use the bump sensors to stop the robot. Most of the bump sensors are currently not working and in need of repair.
 - The brake: when the robot starts (and also after you have pressed the E-stop), the brake turns on. When the brake is on, the robot will not move even if you tell it to. To turn the brake off, first *stop any programs you've left running*, and then navigate to "Brake" in the menu on the robot and press the button. The brake indicator on the robot display should switch to "OFF."

4. When you are done with the robot, shut it down as follows:
- (a) Return the robot to its charging station. You can either use `mproremote` or just pick the robot up and carry it (carefully).
 - (b) Run the `mproshutdown` command
 - (c) *WAIT* one minute for the onboard computer to shut down; the computer is not currently connected to the robot's display, so that will remain on
 - (d) Check the battery voltage reported on the robot display and record it on the log sheet along with the time
 - (e) After one minute has passed, navigate to "PWR" on the robot's display and choose "Kill power"
 - (f) Plug the robot into the charging station and use the rules on the log sheet to set the charging timer based on the battery voltage