Weekly reports are to be emailed to atbecker@uh.edu by 5:00pm on Tuesdays. The purpose of a weekly report is to: (1) give you text and images for your papers, thesis, and dissertation, (2) document progress, (3) identify if you are stuck or need resources.

Weekly report

1. **My *Goals* from last week**
2. **Non-overlap code focus and implementation**

**My *Accomplishments* this week**

1. Non overlap code has been set up
2. Major modification in code to focus on movement of big swarms in the field.
3. Centroid of algorithm selected swarm is displayed during start of motion.
4. Roi can be drawn to indicate target region.
5. Plan made for gathering particles :

Heuristic 1: Biggest cluster is to be identified. Iteratively move clusters to target region and once they reach goal, they vanish.

What I learnt: As clusters move through maze, they thin out. Doing this kind of collection in grid world is giving results based on how thick the passage is.

So,

Heuristic 2: Use PRM with thresholding to find smoothest path and then move masses through the wider paths whenever possible if faced with obstruction.

Heuristic 3: Define parameters to decide if job is done. If it is, then stop swarm motion.

Example: If roi is filled, then collection is successful. If not, then quickly gather as many big swarms as possible. Some jobs can have thresholds of what is a good gathering.

1. Downloaded physics engine for MATLAB. Movement simulation will look much smoother.
2. **My *Goals* for next week**
3. Still need to debug for correct representation of Heuristic 1.
4. Redefine the main condition for pA=pB set for the overlapping particles.
5. Implement Heuristic 2 and 3 with new physics engine for MATLAB
6. Work out the issue with video feedback integration with manual control in real system.
7. Try the code on actual particles now that system is ready for input.
8. **What I need Dr. Becker to do:**
9. Suggest possible algorithms which you would like to try on the non-overlap particles. Now we have 3: Collect first( good for creating localized clusters) , Move biggest cluster( Good for mass focused activities) , Move through easy paths( less scattering of particles).