Meeting Minutes
5.28.10
Advisors meeting

Presentation of what we did in lab this week:

take pictures of plates on a piece of white paper.
Dr. Jin has a dark reader which may be useful for viewing fluorescent colonies.
change contrast on gel picture to see bands better.
have Courtney show us how to manipulate pictures of our gel on the gel reader.
label columns in kinetics results.
Use different dilutions for kinetics readings too.
open wetware for colony PCR procedure.

tricks to clean up the fluorescence:
use cells without fluorescence as a control
spin down, re-suspend in PBS if not getting strong signal.

Research:

Possible directions:
1. Super metal-resistant cell
2. Magnetosomes—Dr. Rao not a fan. Can't just stick a plasmid in to get it to work.
3. Metal Immobilization
4. Metal mobilization

Working on metal resistant cell for now since it's a prereq for everything else we would want to do with metals.
challenges with metal systems: Dr. Rao tried to activate fer with iron but never able to do so. LB isn't gonna work, going to have to use minimal media, chelate treat to pull out ions. Have to make sure there aren't any metals around. Most not active at high concentrations of metal. Chelating agent in media to keep it from the cell.
try to find salmonella counterparts of the genes in e.coli
ZntA expressed by one of Dr. Jin's grad student and it works to export zinc. Exports lead and copper too. Just express a few efflux pumps and it should be pretty resistant to most metals.

People to talk to:
Dianne Newman—looking for a mechanism of 3-4 genes to clone

mutagenize e.coli, grow on metal until something that survives. Chop up DNA, put it on plasmids, transform, see which lives, that's the one with the metal resistant gene.

Metals research: design primers

Megan: cadmium or mercury
Tom: gold
Matt: nickel
Steve: zinc
Bob: Copper
Amanda: Lead
Erin: Arsenic
Francis: Silver

Meeting with tools team:
group to build strain designer, group to improve imptools.
simvector4—plasmid design

Modeling with tools team: 9-12 Thursday morning

Abstract due june 18th for chemical and biological defense science and technology conference if we want to do it.

wetlab: meetings with advisors Fridays at 11:00 am.
tools: tentative, meetings with advisors Friday at 9:30 am.
both teams: Meetings Friday 2:30 pm

12:00 Monday barbeque