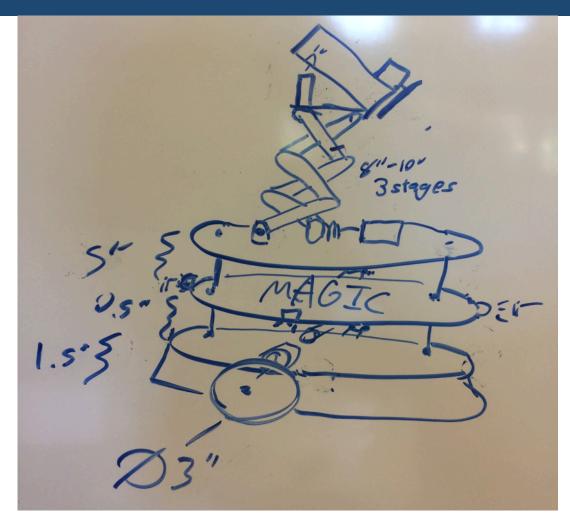
### Team 29 - && OxO1 Skip to my loop.



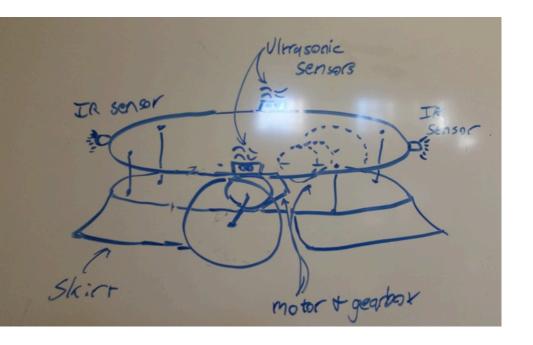
Benjamin Galligan, Lars Roemheld, Ravi Haksar, Dongsuk Shin

## Overall sketch Fast-moving slam dunker.



- Driving Platform: similar to cockroach, more sensors
- Skirt: fend off stray balls
- Magic zone
- Scissor-Lift for slamdunk slope

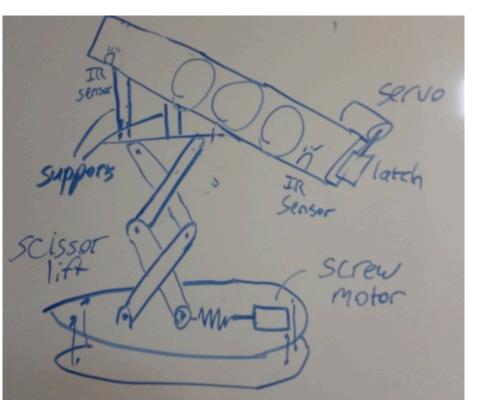
## Phase 1: Drive+Navigate First result is platform that can find bumper & 1pt hoop





- Sensors:
  - IR proximity front & back
  - Ultrasonic sides (long range)
- Drive chain:
  - Two motors with gearbox for 2twowheels
- Arduino Magic
  - Compute shortest way based on distance to sides?
  - 90deg turns

# Phase 2: Score Based on driving platform, we will implement a dunking slope

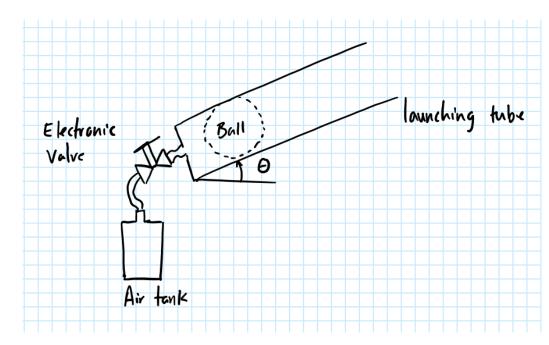


#### Lift requirements

- Scissor lift with approximately 8" long links
- Supports to slope dunking system
- One motor with gearbox and screw for lift
- IR sensors on dunking system to detect balls
- One servo for slope-latch

# Shooting Mechanisms

- CO2 launcher
  - Using air pressure
- Spring with motor & latch
- 2 wheel launcher
  - Motorized mechanism



## Parts of Interest Preliminary sourcing research

Part	Quantity	Cost/Each	Part Number	Shipping speed	Notes
Motor driver	1			N/A	L293 Board
DC motors					
Gearbox	2	14.95	Sparkfun 12866	Max 3-5 days	Motor/Gearbox/Wheel combo
Wheels					
Servos	2	5			Purchase from lab supplies?
DC motors	2	12.95	Sparkfun 12316	Max 3-5 days	For launching balls
Air valve	1	8.95	Sparkfun 10456	Max 3-5 days	For launching balls
Compressed air tank	1				Unable to find reliable vendor
Ultrasonic sensors	4	5.69	Sainsmart HC-SR04	Prime	Near and far range finding
Compass	1	14.95	Sparkfun 10530	Max 3-5 days	
Acrylic			Home depot	Immediate	

# **Project timeline** Look, we have a GANTT chart!

	Name		Feb 16 - Feb 22 '15						Feb 23 - Mar 1 '15								Mar 2 - Mar 8 '15								Mar 9 - Mar 15 '15			
	Name	М	Т	W	Т	F	S	S	М	Т	W	Т	F	S	S	М	Т	W	-	T	-	S	s	М	Т	W	Т	
1	Validate sensing & turning options																											
2	Manufacture platform board																											
3	Buy 2 motors, 2 gearboxes, 2 wheels				_																							
4	Buy sensors				_																							
5	Assemble drive train									_	_																	
6	Set up state machine, make Arduino drive									_	_																	
7	Test navigation & finish drive train												0	2/26	/201	5												
8	Buy scissor lift parts									_																		
9	Assemble scissor lift, lifting motor																											
10	Assemble dunking slope with IT sensors, servo latch																											
11	Make Arduino dunk																											
12	Teaching team checkoff																•	• 03	/03	/201	5							
13	Bugfix, optimize																			_			:					
14	Final presentation																							•	03	/09/2	015	