

Manage Your Robot Build Project

...and the rest of your team activities

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Team 449 - Blair Robot Project

What is a Project?

Something (a **deliverable**) that you want to achieve by a certain **time**.

This requires **resources** (people, materials, tools, budget ...), **ownership** (who is responsible?) and a **schedule** (when?).

Tracking is essential to ensure things happen on time and to **adjust** as necessary when they don't.

Does this sound like FIRST build season....?



Overview

- Organization
- Setting goals and milestones
- Prioritizing
- Time Management
- Communication - BaseCamp: online platform
- Adjusting Projects
- Student Leader-Mentor Relationship



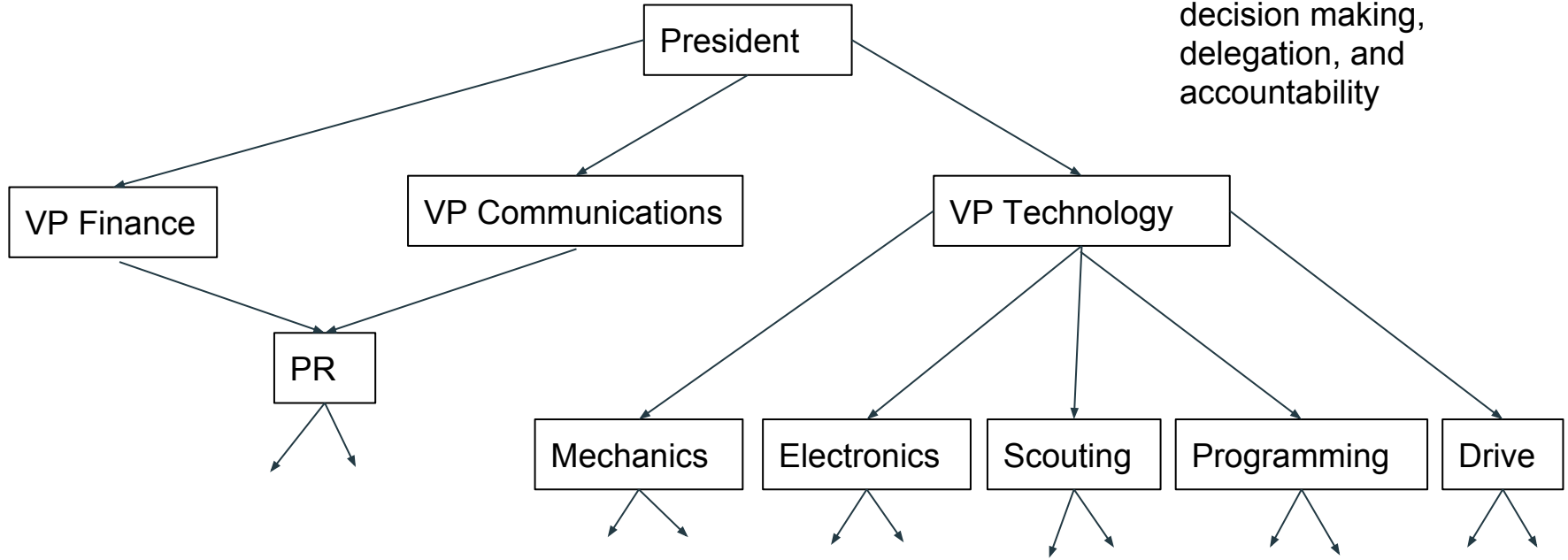


Organization



Understanding everyone's roles
and responsibilities is essential for
accountability

Hierarchy helps with decision making, delegation, and accountability



Organizational Chart - What are the responsibilities for each position?

Projects and the team should have a formal organization

For Each Project...

- Who is overseeing the project?
- Who is responsible for communication?
- Who is responsible for integration?
- Who is responsible for work plans?

Setting Goals



Shape projects around goals.
Goals give projects a purpose and
direction.



Setting Goals - General

- Technical
 - Practice with integration
 - Learning to build a new mechanism
- Non-technical
 - Improving outreach organization
 - Increasing outreach presence



Setting Goals - Strategic

Short Term Goals

- What does the team need to learn before build season?
- By the end of the year?

Long Term Goals

- Where does the team see itself in 3 years?
- How does this project lend itself to reaching these goals?



Setting Goals - Build Season!!

- Game Strategy - what will our robot do?
 - Capabilities: gear handler, ground pickup, shoot
- Control: low/high gear drive, PID
- Autonomous: front peg, side peg, fuel delivery
- Robot bagged (i.e. all goals met) by end of week 6

Examples from Steamworks game



Setting a good goal

- Specific
- Realistic
- Relevant
- Measureable
- Time-bound



Set milestones as a roadmap to
reaching your goals.
Milestones define a path that will
get you there.



Setting Milestones - Build Season!!

- Milestones - **deliverables** at a specific point in **time**.
- If we meet them, we are on track to reach our goal.
 - Decide on game strategy by end of week 1
 - Finish control code by end of week 4
 - Gear handler proto wk 3, full integration wk 5

Examples from Steamworks game



Prioritizing



Establish priorities to know what
is more important.



Prioritizing

- Helps with resource allocation
- Essential when making tough decisions



Prioritizing - goals

What goal is the most important?

How does this translate to what task is most important?



Prioritizing - tasks

Which task is most important right now to reach the goal?

What needs to be done first - Critical Path



Time Management



Why Timelines?

- Reference for the duration of the project
- Keep projects on track
- Accountability
- Communication



Building Timelines

- Timeline should reflect priorities
- Should be specific
 - Date
 - Time and resources allocated
 - Specific deliverables, tasks and milestones
 - Who is responsible for what?



Date	Activity		
Time	3:20 - 4:30	4:30 - 5:30	5:30 - 6:00
9/14/17	Welcome! Intro to 449 and FIRST powerpoint.	Icebreakers	Icebreakers? End early?
9/28/17	Mechanics Machine and Assembly Tool Training Presentations	Safety Tests (should really only take 30 min. max)	Fabrication Activity
10/5/17	Electronics General Training: Parts and Sensors Presentation (may extend past 4:30)	Group Kahoot. Can set up stations for crimping, wiring, etc.	
10/12/2017	Programming Presentations: Enabling the robot, how robot code works and state machine	PID w/ RIAB	Nothing planned
10/19/17	Drive	Slideshow and Group Design Exercise	More in-depth physics or science
	Mechanics Part 2: Intro to CAD (Demo)	Individual CAD time	

Sample Timeline: General Training Curriculum



Sample Timeline - Build Season

- Wk1: choose game strategy and robot dimensions
- Wk2: build frame/power train; design mechanisms
- Wk3: prototype mechs, wire robot and sensors
- Wk4: finish mechs, code, wiring
- Wk5: Full system integration
- Wk6: Driver practice and last upgrades - BAG!!



Enforcing Timelines

- Leadership, project leaders should build them together
- Project leaders should be expected to follow timelines
- Project leaders should update leadership on progress
- Leadership should check on project leaders
- Together: identify schedule deviations, create solutions



Communication



Communicate what NEEDS to get done, what HAS been done ...and most importantly, what HASN'T been done



Communication - Planning

What NEEDS to get done?

- Goals and Milestones - project and meeting
- Workplans
 - What goals need to be achieved today?
 - What are the milestones and tasks?
 - Who is doing what and when?
 - What resources and cooperation needed?
- Ideal: written by project leads and approved by project manager



Communication - Tracking

Tracking - What actually got done and what didn't

- Progress report - who did what
- Are we on track to meet milestones?
- Does schedule or resource allocation need to change?

Communication - BaseCamp

- Online project management platform: basecamp.com
- One place to RULE THEM ALL
- Can set up projects or teams w/separate members
- Chat/ping, comments, task lists, schedules for each
- Customize updates - auto-send email (or not)



Communication

- People should know where to access information
- Have different places for different types of information
- Not everyone needs every piece of information



FRC Team 449: The Blair Robot Project



FRC Team 449



My Stuff

- [My Assignments](#)
- [My Bookmarks](#)
- [My Schedule](#)
- [My Drafts](#) 2
- [My Recent Activity](#)

+ New

Teams



Drive



Driver



Electronics

The place for all of your electrical needs



Mechanics



Mentors + Parents 2017-18



Programming



Public Relations



Spirit 2018

Let's get Spirited!!!



+ New

Projects



Do the same sorts of projects over and over? [Make a reusable template](#) to save yourself time.

2018 Season Event Planning

Battle of Baltimore
Updates from the Battle

Electronic Scouting

FRC Team 449



Campfire

- Noah Gleason 11:27am
DLC pack 2: <https://www.first...>
- Gautam Das 2:28pm
ay let's go wallups is 2 weeks ...
- Gautam Das 2:29pm
i mean if it was on the same d...
- Gautam Das 2:30pm
but still
- Caitlin King 2:30pm
Wallops is between our comp...

Message Board

- Serena D. 5:05pm
Meeting Recap 10/26/17 — Hi guys, This is what we did
- John D. 12:24pm
Room 363 Clean Up after Meetings — For those of you
- Shwetha K. Oct 25
NEW Outreach Event (!!!) — Hi guys, MCPS is holding a
- Aniel R. Oct 25
10/26/17 Agendas — Hey everyone, here's the agenda

To-dos 4/5

- General**
- Add to PR packing: any flyers we want to advertise + "DRIVE OUR ROBOT" sign
 - Make an Instagram @Laura E.
 - Print scouting sheets for IROC if needed @Nate K.
 - Organizing unpacking on Tuesday afternoon
 - Fix pneumatics (a leak somewhere) @Rafi P. @Talon Y.

Schedule

- Oct 28
MRA Education Day
- Oct 28
NO MEETING
- Oct 28
GBTLA Java Class

Automatic Check-ins

- What did you work on this week?
This check-in is paused.
- Have you made a work-plan for the week?
This check-in is paused.

Docs & Files



Other tools available: Forwards

Today

- 2 people were chatting around [the Campfire](#) 5:28pm
- Serena D. added a new message called **Meeting Recap 10/26/17** 5:05pm
Hi guys, This is what we did yesterday:

Adjusting Projects



Adjusting Projects - The Process

1. Communicate
2. Evaluate how this reorients goals
3. Adjust priorities
4. Refer to the timeline
5. Adjust timelines

Student Leader - Mentor Relationship



Our team is Student Led and
Mentor Guided



Mentoring

- Mentors are assigned to support/guide a project
- ask questions, warn of problems
- channel questions/comments thru one mentor
- follow progress on BaseCamp, emails, onsite
- step up if important tasks slip behind



Project Management TakeAways



Project Management Tips

Planning & Implementing

- Set Goals, Deliverables and Milestones
- Prioritize!
- Create schedules with responsibilities
- Break down into tasks - Prioritize!
- Create work plans in advance for each day so EVERYONE knows what they need to do
- Focus on Critical Path tasks

Communicating & Tracking

- Write and post progress reports
- Push info instead of waiting to be asked
- Evaluate and re-evaluate goals, deliverables and milestones - Re-Prioritize?
- Adjust plans according to priorities
- Let people know what is going on
- Online platform is very helpful

