

Effective Student Leadership Development

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Who Am I?

Head Coach of FRC 1678, Citrus Circuits

Director of Hardware and Systems Engineering
at Advanced Farm

20+ years of experience in FRC

Began coaching 1678 in 2008 while studying at
UC Davis

Many of the lessons in this presentation have
developed from trial and error over nearly two
decades



Overview

Why Invest in Student Leadership?

Citrus Circuits “Eras”

Key Principles

Citrus Circuits Methods

Next Steps



Why Invest in Student Leadership?

Sustainability

Competent student leaders can carry more responsibility for the team

Competent student leaders inspire more competent leaders to take their place, FRC is all about turnover

Student leaders taking on more for a team frees up coaches for other tasks

(Or more free time! shhhhh)



Soft Skills

FRC is primed for soft skill development

Fostering a healthy student leadership culture creates well-rounded FRC graduates

Students enter FRC at all points along a “soft skills” to “hard skills” continuum

Without structure, “hard skills” strong students will be less likely to grow their “soft skills”



Product Quality

Good leaders bring the best out of their team

Good student leaders bring the best out of other students

Good student leaders are better project managers

Energized and motivated students will work harder towards team goals, including competitive targets



Citrus Circuits “Eras”



2005–2011 | Debut Era

10-20 students, 1-3 mentors

The team rarely met in the offseason, no training

At kickoff, the team would decide who our captain, leads and subteam assignments were

Most students were at robots to hang with friends

Student outcomes were mixed, not a lot of growth from participating, few STEM graduates



2011-2014 | 1989 Era

Taylor swift found pop, we found new purpose

20-30 students, 3-5 mentors

Team met regularly in the offseason

Training processes began, but not well formalized

Student leadership established in the offseason

Regular student leadership meetings began

Very loose mentor structure and standards



2014–2018 | Reputation Era

50-100 students, 5-10 mentors

Offseason trainings are formalized and iterated on

Training is tracked across the team by leads

Students are nominated for leadership positions, interviewed, and selected in the offseason

Outreach project growth allows for additional leadership opportunities on the team

Reputation built within Davis and throughout FRC



2018–Present | Evermore Era

80-110 students, 10-20 coaches

All incoming students are interviewed and selected in the summer

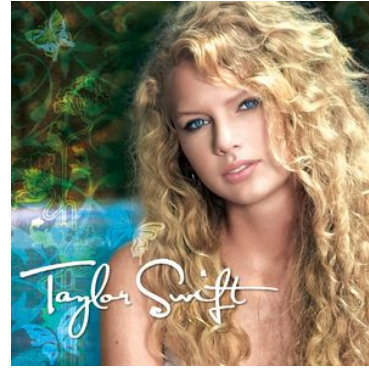
All leads, including outreach positions, are nominated, interviewed and selected in the offseason

The average Citrus student experiences 3-5 interviews during their tenure on Citrus

Coaching standards raised, interview to determine fit and placement



Discussion: Which “Era” does your team resonate with, and why?



Key Principles

More is Caught than Taught

Students watching other students excel shows them that they can do it too

Coach statements and encouragements will not have the same affect

Grow the expectation of what leadership means for your team over time

Find ways to place your “all-stars” into strategic roles, which will tee into the next point



You Get What You Celebrate

Students notice which students are rewarded within the team, and set their aspirations accordingly

Find ways to avoid elevating students that may be popular or talented, but do not embody your team and leadership values

Consider quieter students that might not put themselves forward for leadership positions on their own accord



Students Can Do a LOT

Given the right environment and structure, students can achieve at a very high level

Students taking on more responsibility, at a high level of quality, will help your teachers and coaches

Strong student ownership can also make a broader reach possible

Lean into this where possible



Fail Leaders Faster

No student will come fully ready for their role

Plan fall work and other projects to help “shake the bugs out”

The earlier you as a coach can identify points of improvement, the better they will be as a leader



FRC Team Culture is Generational

We get new students every four years, which is a superpower few groups have the benefit of

Don't be afraid to redefine the team regularly, new students won't know the difference!

If your alumni come back and don't recognize the team, there's a good chance your growing and improving



Citrus Circuits Methods

Leadership Selection

In May, anyone on the team can nominate any student for leadership roles via a google form

Core Leadership (Captains, Head Coaches) review the nominations and schedule interview times

Technical coaches participate in some interviews

Core Leadership deliberates and makes selections



Leadership Handoff

Leadership Selections are made in middle May, before the end of the previous school year

Each incoming leader will meet with the outgoing leader for the same role

During that meeting, outgoing leaders will review important information, including best practices, account login info where appropriate, and lessons learned

Incoming leaders are required to sign their job description, and get the outgoing leads signature to confirm the handoff happened



Leadership Training

Citrus coaches give a series of presentations in late spring and fall that cover communication practices, project management, etc

Core and subteam leads meet over the summer for a “leadership retreat” where we discuss goals and vision for the coming year

“On the job” training is solidified with offseason robot projects (currently building 3x offseason clone robots)



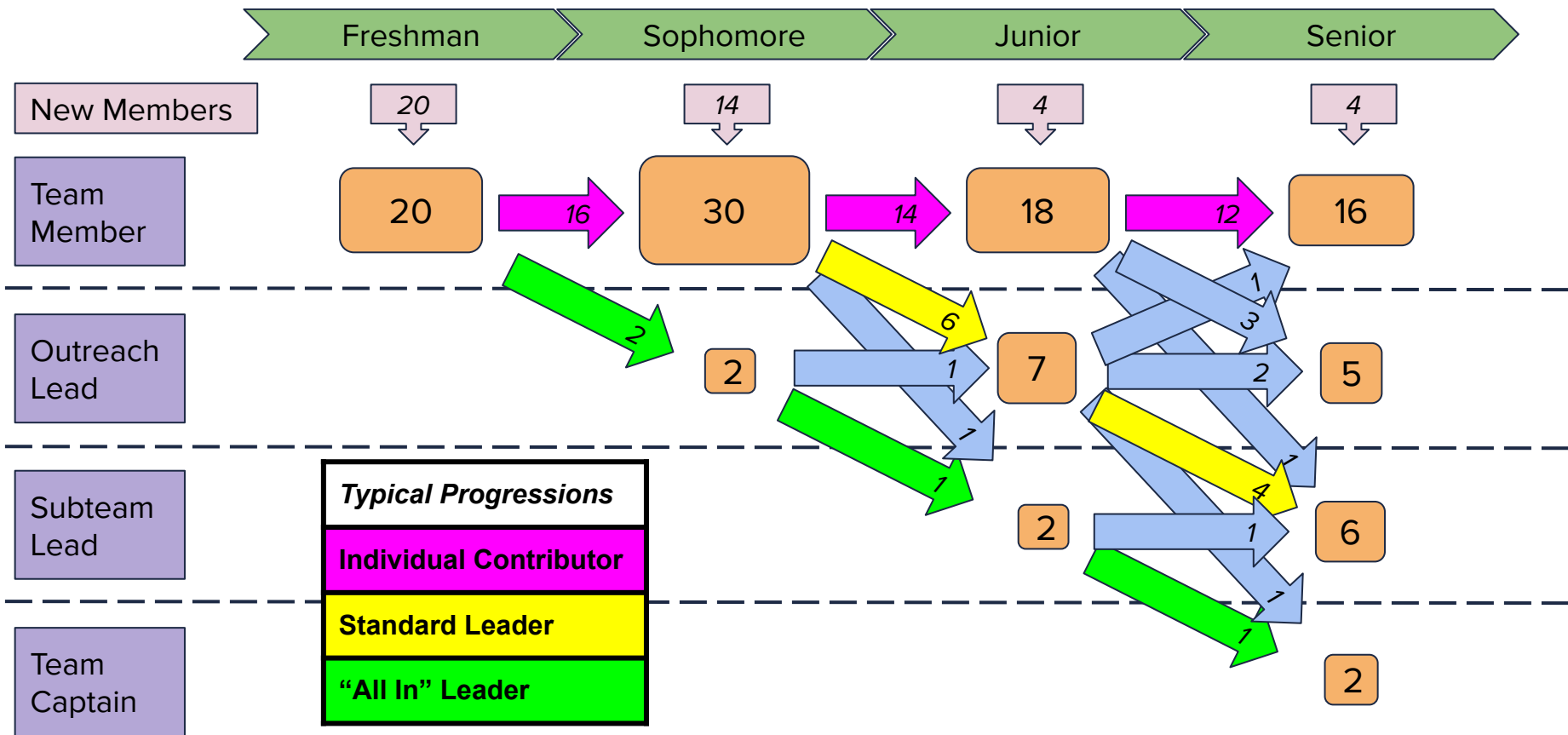
Leadership Meetings

Once a week (every other week during the summer), Captains, Subteam Leads, and Head Coaches meet to discuss team topics

These can range from event logistics, behavioural issues, or technical topics

The captains share a leadership update at the next general meeting following a leadership meeting





The Citrus "Leadership Funnel"; Snapshot of a Typical Year

Next Steps

Consider Your Current Structure

What signals are you sending to your team about what it means to be a leader?

Are student leaders professional or just popular?

Are mentors/coaches backstops or bosses?

Do students see leadership as a burden of responsibility? Or as a title with status?



Be Patient

The 1678 leadership culture took over a decade to develop into what it is today

Leaps in team progress can often be correlated with generations of students (turnover is your friend!)

Given the right environment and structure, progress will happen over time



Focus on Progress

Give your leaders time and opportunities to lead

Each of your leaders will have strengths and weakness in different areas, lean into them

Find ways to train and prepare your leaders

Emphasize practice (aka Build More Robots!)



Thank You! Questions?

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