Fundraising

Made easier by good project and team management

Hai-Yue Han and Katherine Han
IEF Solar Car Conference February 27th 2021

Fundraising basics

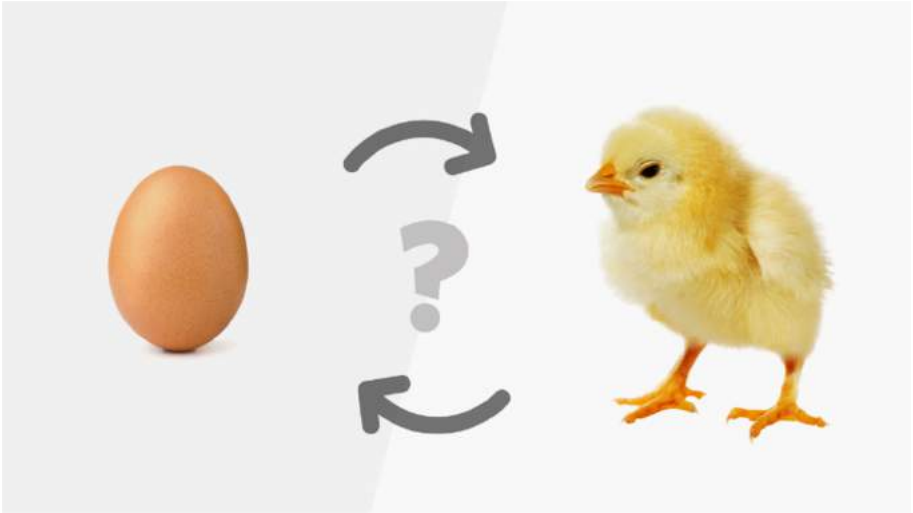
- Exchange donation for recognition
- Donations can be monetary or in-kind
- Usually sponsors are displayed on:
  - Website
  - Team wear
  - Booths
  - Car
- Success is typically built on trust of execution and solid planning

Sources of funding

- School
  - Funding possible from school directly
  - School departments
  - Alumni association
- Industry
  - Matching donations from employees
  - Sponsorships
- Friends and Family

Starting fundraising with a new team

- New teams do not have the luxury of successful history to help with sponsors
- For monetary sponsorship, seek out school departments and friends and family of the team that work in companies that do matching donations



Finding a sponsoring department

- To get started:
  - Find a faculty advisor
  - Find a hosting department
  - Find workshop
  - Not always straightforward or easy
- Doesn't have to be engineering faculty or department; some teams started out with chemistry professors as faculty advisors (in n only) working out of physics shop
- Some schools focus on maximizing profits for minimum investment and risk
  - Consider this motivation when interacting with your school
  - If team raises school profile locally and nationally, the school might see enough benefit to make a commitment

Publicity and fundraising - they go hand in hand

- Raise student and public awareness by giving interviews to student and local newspapers
- If you have a previous vehicle or a partial vehicle, hold an open house to attract attention
- Work with student classes to raise student and school awareness
  - Capstone (senior design)
  - Intro level classes
- Take previous vehicle to sporting events, conferences, etc (coordinate with school PR - do not do this on your own!)

School departments

- Ask host department for funding
- Ask other departments to match host department
  - Usually other departments will give a little less
- Should be able to expect departments to fund on an annual basis, but some might give more often
  - Be prepared to present and commit to a timeline and execution plan for your project
  - Some departments might do additional funding for achieving milestones

Funding from school directly

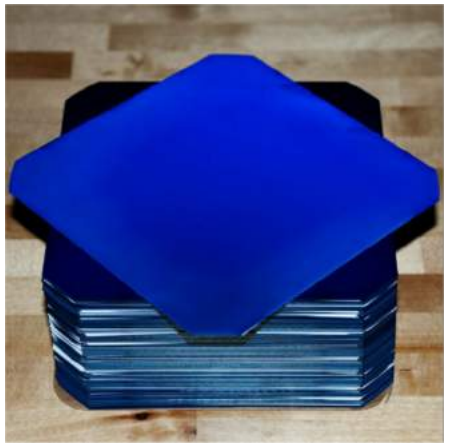
- Some teams have successfully petitioned student body to include solar car teams
- Student government
- Alumni association

Corporate monetary sponsorships

- A lot of large companies will do employee matching donations
  - Try to get a friends and family of the team to sponsor with matched donations
- Financial donation
  - Companies can give direct financial donations to teams in exchange for advertisement, publicity
  - Companies may ask team to come to events; attend these, as they will often lead to continued and increasing sponsorship
  - Find advocates in all your nearby big name, successful companies
- If you don’t ask, you automatically get a “no”

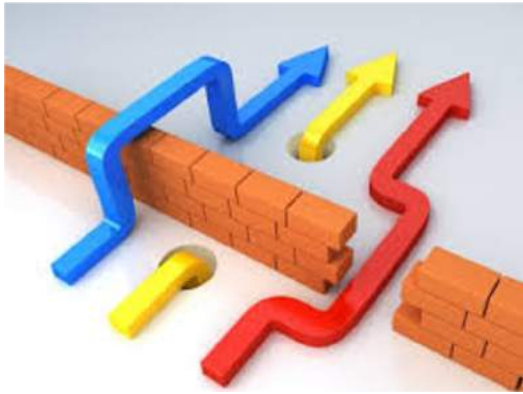
In-kind donations

- Don’t underestimate the power of in-kind donations - often easier to get, and greatly reduces need for large monetary fundraising
- Materials
  - Composite shops or manufacturers for near expired prepreg
  - Battery companies
  - Solar companies
- Services
  - Composite shops for body making
  - Solar companies for array making



Project Management: Scheduling and Project Timeline

- Effective project management is about removing roadblocks for team members
- Detailed plan
- Plan extra time
- Schedule extra time for testing
- Understand dependencies
- Understand lead times for materials, funding
- Communicate the status of the project with teammates and sponsors
- Typical rule of thumb - things usually takes **twice as long as you think.**



Team Management

- Team/subteam leader responsibilities
  - Maintain project timeline
  - Support team members in their tasks, help overcome roadblocks
  - Plan work sessions and make sure all materials are available
  - Learn strengths of each teammate and assign responsibilities
  - Don’t micro-manage; assign responsibilities
  - Foster sense of ownership in every team member
  - Help teammates develop as engineers, team players
- Sense of ownership, contribution, and learning is what keeps team members engaged
- Foster a team environment that makes people want to be involved. Clearly communicate:
  - Desired social and learning environment
  - Responsibilities and behavior
- Help teammates feel welcome during all group activities

Effective execution

- You must do whatever it takes to succeed.
  - If you don’t have the skills to do the job, find someone who does
- It’s a team effort, but each teammate must feel some responsibility
- Line up work with clear, achievable goals

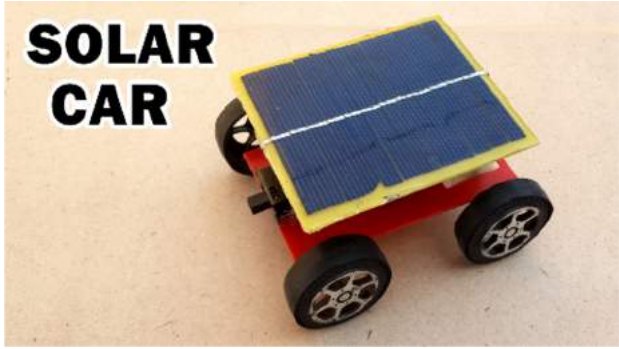
How Solar Car Prepared Me for SunPower

- **Hands-on interdisciplinary work –** Experience in electronics, mechanics augmented my chemical engineering training
- **Exposure to other types of engineering –** a realistic understanding of what is possible in other fields
- **Managing capabilities and resources on the team –** directly translates to managing an engineering team in industry. Keeping everyone working toward a common goal, making sure the work is efficiently distributed, keeping everyone motivated and feeling valued, helping each teammate feel ownership in the project.
- **Taking responsibility -** stepping up and getting things done when you see the need is valued in industry
- **Understanding deadlines** and the pathway required to reach goals in time. Gantt charts. Communication to funders and other officials is just like reporting to the head of department on progress.
- **Understanding that if the team doesn't perform the project will fail.** There will be consequences (no racing that year or stocks dropping due to the company missing a deadline). Don't just do what you think you can, find a way to do what it takes to succeed.

SUNPOWER®

How to Talk to Employers (R+D team focused)

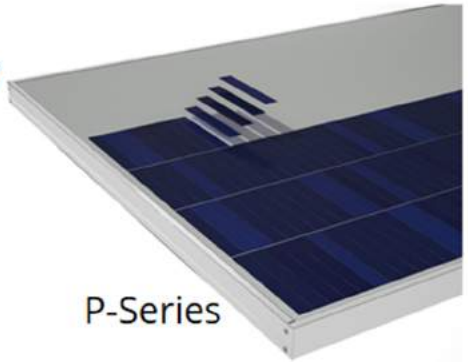
- I was a team leader in solar car, which took 20 hours per week for 2 years
- Our funding was based on meeting our **milestones**, which is similar to the **stage gate process**
- Before we could race, our car had to pass scrutineering, which is similar to **certification testing** for safety and functionality
- In solar racing mediocre efforts result in failure
- I had to be **agile** in problem solving
- I have experience networking to secure resources for a project
- Removing **critical path roadblocks** was essential to success
- I learned to solve the details without forgetting the **big picture**
- Being able to talk in **detail** about you engineering projects



Thank you!

My Role at SunPower: Reliability Engineering

- Lead a team focused on proactive reliability of our P-Series Products (front contact shingled modules)
- Design, develop, or determine test plans for new products
- Calculate expected module degradation over warranty lifetime
- Work with R+D to provide the best product to our customers, focused on safety, performance, and cosmetics (in that order)
- Balance academics with agility
- From failure mode effects analysis to PVLife



P-Series

P-Series

X-Series A-Series