

Los Altos Academy of Engineering NEWSLETTER

"Building a cleaner, more fuel efficient tomorrow"

MARCH 2019



All Hands on Deck: Incredible Start to this Year's Competition

By: Cesar Sanchez & Leandro Wong

Solar Cup 2019 had an excellent start this year. Our Drive Train and Steering, as well as Electrical and Solar Array technical reports, were turned in to the Metropolitan Water District, where we received perfect scores of twenty-five out of twenty-five on both. These fifty collective points will move forward to our total Solar Cup score this May, placing us at amazing footing to start this year's competition.

Our composites team, in charge of body filling and finishing the hull of the boat, completed its task of waterproofing the boat's exterior in January, extremely early. This allowed for our main fabrication teams, electrical and mechanical, to step in and make their systems.



The electrical Team has been working on wiring the boat and doing extensive testing on their troubleshooting skills. A simulation table was built in order to test the functionality of the boat's electrical systems and do extensive practice troubleshooting before permanently placing it on the boat. Junior Cesar Sanchez, member of the electrical team, shares, "We have applied the short circuit in the node and failure to identify the problem early into the competition from last years problems as some of the main points of focus for this year's electrical team to prevent any problems for Solar Cup 2019." A Wago wire connector is going to be used on the node which guarantees a connection every time, although the wire connector is efficient further testing needs to be conducted.

With a working electrical system on the boat, the electrical team has begun simulation troubleshooting, where a member puts bugs into the system and the rest of the team sets up the boat for repair then work together to identify the problem. This troubleshooting practice is performed to simulate different issues the boat and team members may encounter overall, reducing the time of repair and performance of the team during the competition. New batteries have been purchased, with now a total of nine batteries for Solar Cup events, all which need to be continuously cycled to increase the batteries performance, race at a greater amperage, and to have data to determine any amperage changes during the endurance events by the minute.

Meanwhile, in mechanical, the boat's drive train is finished. Mechanical team leader, Ryan Lau, states that "we have made excellent progress this year in our build." The drive shaft,

the part of the boat which links the motor to the propeller, was finished quickly with all hands on production. “Everything went into place nicely”, says Mechanical Team Member Michael Garcia, who was responsible for the parts of the drive shaft. In conjunction with the electrical team, the mechanical team tested the motor and how it interacts with the rest of the drive train- it worked!

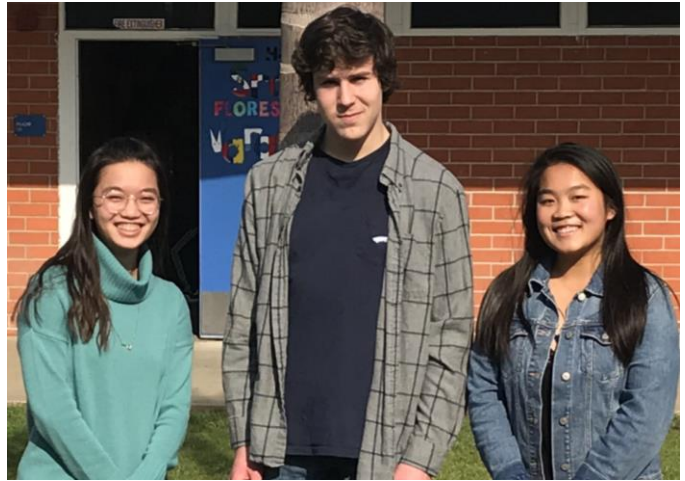
Our pace in building allows for the mechanical team to allocate more time and caress into redesigning their steering system. The new steering system will consist of a simple push-pull cable system running to the rest of the steering system and rudder in the back of the boat. It will be controlled with a lever next to our skipper. Mechanical team member, Leandro Wong, says, “Our new steering setup is much more simplified and streamlined compared to last year’s. Last year’s steering system was heavy and cumbersome. It had a whole steering wheel and a steering system that was hard to adjust.” With this redesigned steering system, we hope to perform far superior compared to Solar Cup 2018.

Although there is much left to do with the boat, such as testing and fine-tuning the skipper’s controls, the bulk of the work has been done. Overall, this great start to competition grants our program a positive vision Solar Cup 2019.

Conrad Spirit of Innovation Challenge

By: Amy Tam

The Conrad Spirit of Innovation Challenge encourages high school students like ourselves to combine entrepreneurship and STEM skills to develop innovative ideas for a sustainable and brighter future. Having participated in the Conrad Challenge the year prior, we decided to participate in the competition again in order to continue the Conrad legacy at Los Altos. We are one of the international semi-finalists of the competition.



In order to expand our research and business marketing skills, we began to explore the different categories that the Conrad Challenge offers: space and aviation, cyber-technology and security, energy and environment, and health and nutrition. Equipped with a better understanding of the benefits of each category from previous experience, we decided to focus on space and aviation. The lack of efficient, sustainable, low-cost local delivery, inspired the creation of AirDash, an app which connects certified drone owners to consumers.

AirDash is an app focused towards the local delivery industry serving as a commercial service that connects certified drone owners to consumers. Our vision of AirDash would promise a quick and safe delivery within minutes. Instead of contributing traffic on the ground through truck or car deliveries, AirDash elevates the industry by taking a step in flight delivery. We were captivated by this design process and we're committed to take AirDash one step further into production: from conception to reality. Through the use of app prototyping software and our previous experience in app creation, we successfully developed a small-scale prototype of AirDash through AdobeXD.

The Conrad Challenge not only allowed us to improve our knowledge of the research and designing processes, we were also able to expand our business marketing skills.

Congressional App Challenge

By: David Sandoval

The logo for AirDash, featuring the word 'AIRDASH' in a bold, blue, sans-serif font. Below the text are three horizontal blue lines of varying lengths, with the longest line under 'AIRDASH' and shorter lines under 'A' and 'H'.

We once again wrapped up Congressional App Challenge as one of our teams takes home the winning title from the 39th District. Our program sent two representing teams in this year's challenge. The first of our groups proposed an app, MooBike. MooBike aims to improve the transportation culture in populated cities such as Los Angeles. The objectives of MooBike are created in preparation for the 2028 Los Angeles Olympics. With millions of visitors coming all around the world, the infamous Los Angeles traffic is projected to worsen. MooBike is a platform that utilizes active transportation to assist those without vehicles to get from one place to another.

Our second team created Homeless Helper to express their concern with the homeless community and to help them. The app focuses on providing the less fortunate people with basic necessities. The app allows others to donate specific items. Not only does it allow you to donate but it also allows you to volunteer at a local shelter, soup kitchen, or church. Samantha Gonzalez, one of the student creator of Homeless Helper app, expresses what she learned from the competition, "I learned that it is important to always clearly communicate with your team members, I also was able to understand the work that goes into creating an app." The app brought awareness to the concern towards this community by further allowing citizens to easily access these options for giving back.



THE LOS ALTOS ACADEMY OF ENGINEERING



STAFF WRITERS:

DAVID SANDOVAL

LEANDRO WONG

CESAR SANCHEZ

AMY TAM

EDITORS:

VICKY ZHAI

EDWARD RICHTER

THANK YOU!

WE WOULD LIKE TO THANK ALL
OF OUR WONDERFUL
SUPPORTERS FOR ALLOWING US
TO CONTINUOUSLY IMPROVE
THE PROGRAM.

CONTACT US!

LOS ALTOS ACADEMY OF ENGINEERING

15325 E. Los Robles Ave.
Hacienda Heights, CA 91745

Phone: (626)-934-5514

Fax: (626)-855-3145

E-mail: pr@lasv.org

Website:

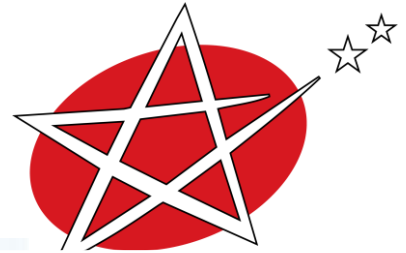
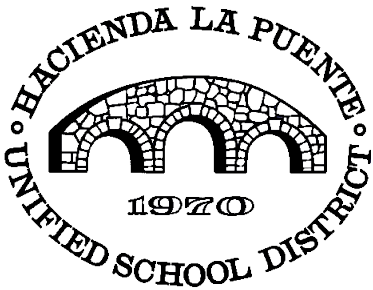
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“There’s something in you that the world needs.’ Good luck, Auntie Lisa” - Lisa Valdez

“May you continue to walk thru many doors that lead to great opportunities and success” - Lori Valdez

“Looking forward to seeing what your talented mind creates” - Deanna Rachlin

“Your dreams are limitless, your soul is special, you’re are my brightest STAR” - Carrie Valdez

“The best revenge is massive success’ Love, Grandma” - Madeline Valdez

“You can do it, Scott, and Los Altos Engineers!” -Mary Castner

“Scott Pan is very intelligent and will be a great future engineer.” -Darlene Quintana

“Good luck on solar cup race and thank you to Mr. Richter and the program for all of their hard work” - Omar Santana

“Great program for the kids! Good luck at the solar cup competition!” - Omar Santana

“Keep up the good work!” - Alejandro Wong

“Good luck Erika and the LAHS Academy of Engineering <3 Ms. Lujan.” - Jessica Lujah

“Eres y seras lo que quieras ser, sé fiel a ti y a lo que quieres en la vida” - Evelyn Wong

“Don’t disappoint me, boi.” - Samantha Hernandez

Melissa Lopez: “Melissa is an amazing person. I am so glad she is my student!” -Eric Contreras

“Knowledge and experience gets you far in life and I am happy to help you get that. Good Luck!” -Juliet Gilek

“Thank you for all your hard work and keep making us proud baby girl. Love, mom & dad.” - Juan & Reina Lopez

“Melissa I am so proud of you, keep going, and follow your dreams.” -Stephanie Bendlin Trevino

“Proud of you all! Good luck in the competition!” -Stephanie Mitchell

“Samantha, you have made me extremely happy to be your mom. I love you. :)” -Angelica Gonzalez

: “Make us proud Elias and LA engineering team!” -Mr. Hong

“Elias, my second son, is a wonderful human being and I’m proud of all his progress.” -Eric Contreras

“You can do anything you want if you believe you can.” -Mrs. Urday“Heard great things about your engineering program keep up the good work.” -Andy & Rose Dominguez

“Love what the engineering program is doing for my grandson setting him on his path.” -Susan Garcia

“Looking forward to seeing their projects race in Temecula.” -Armando Garcia

“Good luck.” -Mr. Panagos

"Hope you guys do great in the competition!" -Ramon Morales
 "I'm proud of the work the engineering program accomplishes!"
 Benjamin Aguilar: "Live your dreams Ben! Go and get yours!!!" -Lyn Galarza
 Benjamin Aguilar: "Great to hear that you're pursuing an interest in science & engineering. Keep it up!" -Sam Tapia
 Kaiden Valdez-Rachlin: "Best of luck working on and racing your solar boat." -Shalom Montgomery
 "Good Luck." - Rosie Huerta
 "Buena suerte Valeria!" - German and Graciela Chagolla
 "El primo" - Daniel Rios
 "Keep up the good work" - Jonathan Estrada
 "Keep up the good work" - Patricia Estrada
 "So proud of you Gabriel" - Mrs. Sun
 "Best of luck" - Jaime Estrada
 "Proud of your hard work" - Jaime Jr. Estrada
 "I'm going to miss Pedro Z. when he graduates. It's been a pleasure to have him as a student!" - Eric Contreras
 "May your ship float and the winds be at your back!" - Geb Fisher
 "Way to go Isaac! Good luck" - Mike and Manya Treguboff
 "Good luck kids! Do your best. We love you Isaac" - John and Angie Treguboff
 "Keep up the great work Isaac. We are so proud of you." - Dave and Lillian Samaduroff
 "Good luck! Remember when problems arise, step back, clear your head and begin again" - Mrs. Mann
 "Engineers Rule! AJ, you are amazing. Proud of you!" - Greg and Linda Parra
 "Go for the Gold Team Los Altos! We're rooting for you" - Tom and Linda Mitchell
 "Congrats on another successful year LA AE" - Jeff Hess
 "I'm proud of all the work the engineering program accomplishes!" -Esteban Hernandez
 "Best of luck to our future engineer" - Jeanne Gooch
 "Good luck! Remember the best way to solve a problem sometimes means taking a step away" - Mrs. Mann
 "I think you're cute, please take me out... or bring me boba on Saturday" - Natalie Guardado
 "This is Justin's Cousin" -Michelle Kuoch
 "This is Justin's cousin." -Anthony Kuoch
 "This is Justin's Mother." -Nivan Kuoch
 "This is Justin's father." -Eugene Kuoch
 "This is Justin's mom."
 "This is Justin's Aunt"