

RU SOLAR CAR

NEWSLETTER



NEW LOGO!!



THE DARES BEGIN...



THROWBACK TO HUMBLE BEGININGS...

AERODYNAMICS & COMPOSITES

This month, Aerodynamics and Composites have made great progress working on the car's body mold. The team has CNC'd all of the wood required for the resulting three molds and built the front third of the bottom mold, a significant accomplishment. By the time this newsletter is out, all the wood-cutting will be done. At the moment, the canopy mold is the closest to being completed, with the bottom mold underway, and the top mold to be built soon as well, given that we acquire the needed 20ft of space.



For those who are not familiar with the procedure, the mold is not the part that goes on the car; it is what we use to shape the composites. We lay composite material, in this case Flax, over the mold and use an infusion process to saturate it with resin, creating the final structure. So far, we've built up the wooden ribs for the bottom mold and now need to fill in the gaps with foam, cut and sand it to match the car's shape, and prepare it for infusion. To prepare, we apply Bondo and Plastic wood in preparation for the primer. We have finished this process on our canopy mold, sponsored by KOMO & PMC. Their help has been invaluable in our process to complete the molds.

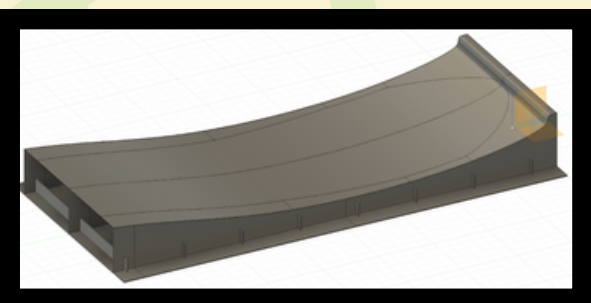
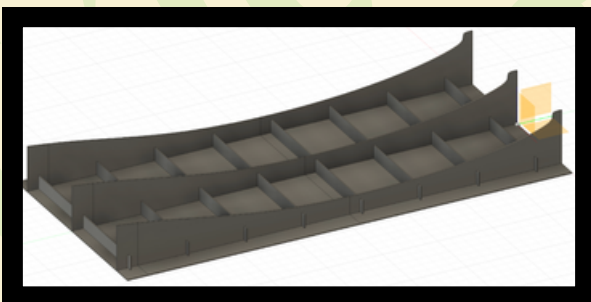
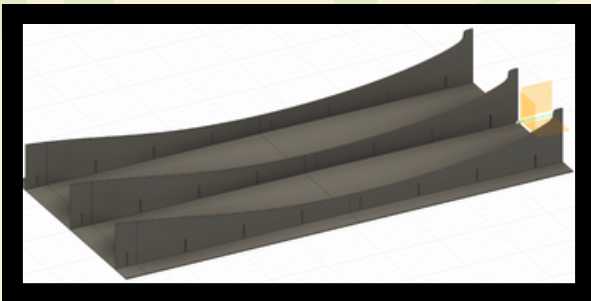


The next major step is assembly but there's a huge problem: we have no space. We are now working on the front third of the car, but when that is completed, we will have to assemble the entire 20-ft long mold to be able to proceed to the composites. This becomes a serious problem as we have no proper garage or warehouse space available.

AERODYNAMICS & COMPOSITES



If anyone has any ideas for a potential workspace, we are still looking for it. After the assembly, the bottom mold will go straight to the composites, and the top shell will be processed similarly but without the foam. The final part of the prep work: applying one or two more coats of the wood filler will be done soon, which will get us that much closer to the final phase. The mold is nearly complete, and progress has been consistent. Now, we just need the space to make it happen!



(ALEX, DANIAL, GLEB, HUZAIFUH, BRUNO, ADAM, JEFFREY)

ELECTRICAL

LOW VOLTAGE

In the past month, the Low Voltage subteam has made great progress towards completing our car's low voltage systems. They have gained five new members focusing on the car's software systems. On top of that, they have redesigned the CAN communication software interface to be as reliable and practical as possible. This redesign is critical as the CAN communication software system is the primary channel of communication between low voltage systems and is at the core of the car's control, electrical safety, and telemetry components. Their next objective will be integrating the new CAN interface with their older hardware and program the control flow for said hardware.

HIGH VOLTAGE

Not to be out done, the High Voltage sub-team has been hammering out our car's electrical system one component at a time. The car's current pre-charger circuit was discontinued, so in the past month the High Voltage sub-team designed a new, reliable pre-charger circuit to substitute the current in case it breaks. Additionally, they have finalized the design of a new, more durable battery box to replace the current one to ensure reliable performance when the team competes at FSGP.

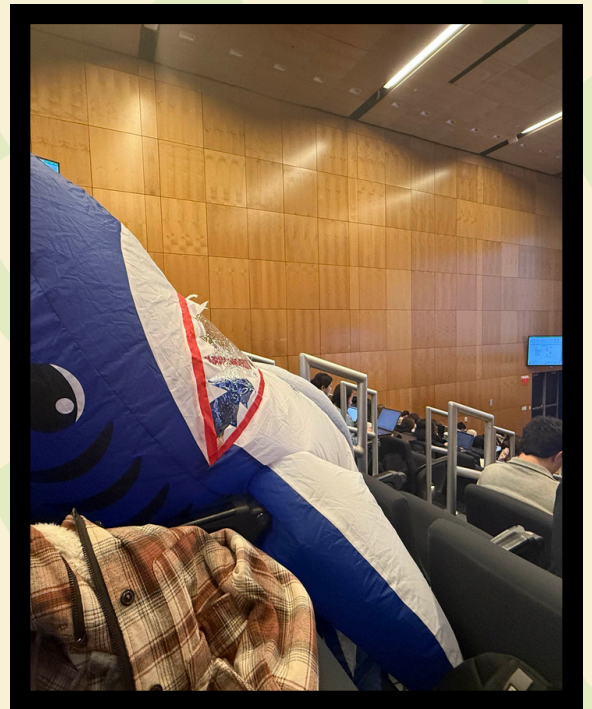
SOLAR

The Solar sub-team has been restless for the past month designing and integrating the solar cells with our car's body. They have downloaded Swinger 2, the software needed to test the solar panels, onto multiple computers in our studio. The sub-team also gained six new members, allowing them to fasten their current pace. The team currently hosts five meetings per week, granting members the opportunity to learn the ropes of making solar panels. Additionally, the team designed the channels for solar panel wiring in the car's aerobody. In order to avoid compromising the structural integrity of the aerobody, the team decided to route the channels for the wires on the outer shell. The team also modified their vacuum press such that it will reach the required temperature for encapsulation without prematurely shutting down. Lastly, the team has been coordinating with Maxeon Solar Technologies to obtain new, and more efficient solar cells.

BUSINESS

This month, Finance and Supply Chain sub-teams, have continued to make steady progress; they have been working to increase the funds and enhance the tracking of purchases, respectively. They managed to get the money we needed to accomplish our objectives and have taken time to organize the inventory in order to avoid the expense of buying things we didn't really need. The Lockheed event went well and was a great way to build contacts. In the meantime, the dare board challenges are in full swing—stay tuned for some hilarious results.

The Logistics sub-team has taken things up a notch regarding major event planning; serious preparations for FSGP has begun which includes: mapping routes, scheduling rest stops and even scouting hotels. We have also begun to arrange booth staffing for the NY Auto Show, so that we can get the most out of the opportunity. On the fundraising side, a St. Patrick's Day bake sale is being planned! Finally, we are joining forces with Rutgers Propulsion Lab to host a trivia night on April 4th.



AARUSH - SHARK COSTUME

ALINA - FOOD DARES



The Marketing sub-team has finalized and launched our new logo across all social platforms. We ended the two-week Hoppy campaign with 35 participants and got the sponsor logos locked in for our solar car apparel. Finally, Food Dares has started filming and we are looking into electronic signage for student centers. Also, Road to Driving Chassis 3 has been uploaded on our LinkedIn and Instagram!

MECHANICAL

SUSPENSION

Last month, the Suspension sub-team has made substantial progress towards getting our chassis rolling. They have upgraded the majority of their parts to 3/8 diameter threads, while also test fitting components to ensure they fit with the front wheel. Importantly, the team is on the verge of mounting the front wheels, and obtaining some bushings and guidance for the spindle's press fit, all four wheels will be mounted.

BRAKES

The Brakes subteam is quite literally "on a roll" as they tweek and finalize their design and calculations of our car's braking system. Additionally, with the advise of Purdue's Solar Car Team, the Brakes subteam figured out the procedure and equipment necessary to remove the tires from the carbon fiber rims. Lastly, the Brakes subteam designed new brake caliper mounts and reverted the braking system from a mechanical to a hydraulic one.

CHASSIS

Our Chassis sub-team is inching ever closer to completing the Chassis. Last month, they designed the front chassis extension with the assistance of our Aerodynamics lead. With the front chassis extension designed, the Chassis sub-team can now run simulations and ensure their design complies with all FSGP regulations. This extension on the chassis is to provide aero with a metallic structure to support the top shell closing mechanisms, as well as to attach a tow point for the vehicle as per ASC regulations. Once the design is finalized, the Chassis sub-team will procure the materials for and weld the necessary structure onto the chassis. Additionally, they have also mounted the seatbelt onto the car, which will be important once we commence training for our drivers.



MECHANICAL

MECH CONTROLS

Not to be left behind, our Mech Controls sub-team has finalized the assemblage method for the steering system. They have commenced assembling the steering shaft and steering pinion. Once these two components have been assembled, they can then combine them with the steering wheel and complete our car's steering system. Additionally, they have also begun working with the Electrical team on the driver interface, including the blinkers and the horn.

WELCOME OUR SPONSORS

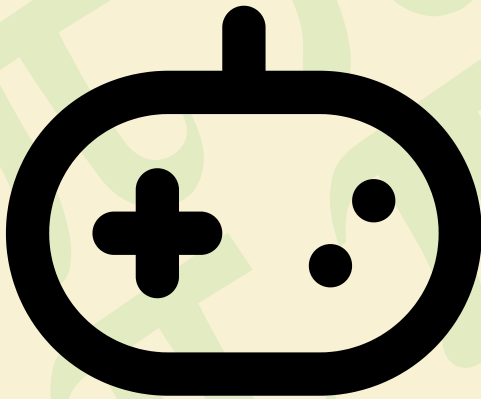


A huge thank you to Polyurethane Machinery Corporation (PMC) for providing us with the foam necessary to complete our canopy mold! They were able to utilize their innovative technology to make this happen.



KOMO produces industrial sized CNC's - they were able to take their sister company's foam and use their new 5 axis CNC to shape it into the desired shape! Huge shout out to all from both PMC and KOMO who aided us in this project, providing us with valuable advice, and unwavering support!

GAMES



RIDDLE RATINGS:

BLACK - HARD

SCARLET - MEDIUM

YELLOW - EASY

GREEN - NEWBIE

WHAT WAS EINSTEIN DYING OF WHEN HE WAS PUBLICLY DEBATING QUANTUM MECHANICS?

I'LL LIKELY GET A CONCUSSION IF YOU GET SOMETHING EXACTLY RIGHT. WHAT AM I?

*****A DAY IN SPRING AND A FOOD YOU FLING. WHEN THE FRATS START THROWING I PERSIST INDEFINITELY. WHAT AM I?*****

FOUR MUSICIANS ARE CROSSING THE STREET WHILE THE SUN IS RISING. WHO ARE THESE FOUR MUSICIANS?

WHICH GREEK GOD WAS HELIUM NAMED AFTER?



**THANKS FOR
READING!**