

# LAFAYETTE COLLEGE

*Electric Formula SAE 2019-20*

Easton, Pennsylvania 18042-1775

## **FSAE Electric Formula Car Meeting Minutes – 3:10, AEC 429, September 2, 2019**

Scribe: Jon

Attendees: Leah, Simone, Clement, Alicia, Zhengxie, Tiger, Austin, Dwayne, Phil, Maureen, Tim, Jordyn, Jon, Zach, Dan, Carl, Noah, Gabe, Monserrat, Nick, Michael, Luc, Cat, Prof. Nadovich, Prof. Helm, Prof. Sajadian

1. Call to order - Leah
2. Leah reminded everyone about using Slack and to turn on notifications
3. Status reports
  - a. Drivetrain
    - i. Went through report from last year
    - ii. Want members of the team certified for welding by the end of the week
    - iii. Noted that no one who has sat in the car can reach the pedals comfortably
  - b. Chassis
    - i. Need to order more measuring tapes
    - ii. Need to either look into getting waiver or working around the current size of the cockpit, which is currently slightly too small
    - iii. Gabe and Carl going tomorrow afternoon to get TIG welding certified
  - c. Suspension
    - i. Concerned with the safety of the current steering setup
      1. Gears could strip
    - ii. Have extremely small clearance between the wheels and the battery storage
    - iii. Might have to look into moving the steering forward
    - iv. Positioning of steering comes into your lap, aka it is very bad
    - v. Want to evaluate whether or not the old car's parts can be salvaged
    - vi. Looking into upgrades to spherical bearings
    - vii. Will work with chassis team to move forward with changing the suspension
  - d. Battery/TSV
    - i. Started initial design talks for accumulator housings
    - ii. Evaluating last year's AMS to see if it works or not

- iii. Want to add additional sensors, e.g. current and temperature
    - iv. Will discuss necessary sensors and charging approach
    - v. Will need another mechanical engineer working on the TSV
      - 1. Complete redesign of the accumulator housings too much for one person
    - vi. Need to figure out how to test what the team has from last year, as not much has been proven functional
    - vii. Monserrat and Michael will be joining the TSV team
  - e. Interconnect
    - i. Have looked at required cables, mountings, enclosures
    - ii. MEs will start talking with ECEs tomorrow
    - iii. Need to look at the existing TSI enclosure to determine how it needs to change
    - iv. Want the car to pass the rain test
    - v. Maureen wants to make an automatic debugger for the car
  - f. TSI
    - i. Finished WBS last week, currently in Google Drive
    - ii. Reaching out to MEs next week to determine the physical requirements of the TSI enclosure
    - iii. Started looking at the schematics for the pre-charge circuits and other systems to start a redesign
    - iv. Will look at the firmware starting next week to confirm functionality
    - v. Preliminary workshop on Kicad will happen in the next week
  - g. GLV
    - i. GLV is currently in a good position (functionally), small changes required
    - ii. Lots of rules violations that need to be looked at
      - 1. Warning light needed
    - iii. Will look at developing a test fixture for the breakout board
    - iv. GLV circuits in dyno room need looked at
    - v. Cooling system could use an upgrade
    - vi. Last year's team left us with a proposal for a new enclosure, there can be work done with a MechE to work on ironing out mounting to the car
  - h. SCADA
    - i. Reviewed the errata for last year
    - ii. Will start looking at a virtualized CANBus
    - iii. Need a raspberry Pi2CAN board, might have to purchase
    - iv. Need to create a WBS
4. To-Dos
- a. Need to create a teamwide WBS
  - b. Prepare for preliminary design review
5. Budget

- a. Would be preferred to have a financial plan/budget set up before we start making purchases, although it is recognized that we might need to start purchasing things now
6. Misc roles in the car - there should be a discussion about the roles that aren't specifically part of a team
7. Document submissions - they should all be in PDF so that a separate program outside of a browser is not required
8. Would not be a bad idea to inventory all of the parts that both the MEs and ECEs have possession of
9. Until safety training has been completed, no one is allowed to take apart the battery packs