



17th Annual AUVSI Student UAS Competition Thanks to our Sponsors



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2019 AUVSI UAS Student Competition



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That is ME!!

2019 Firsts

- 75 (69 in 2018) Teams Registered, 68 (55) Papers, 52 (47) FRRs, 44 (51) out to the flight line, 41 for legal flights 33 Got Autonomous flight
- 9 (15) “Crashes”
 - Some were GREAT!!
 - Zero Tree Strikes!
 - Two aimed directly at Interop Tent
 - NSW Crash was the best
- Every Day started with a Time Out (come’on man)
 - 24 teams took Time Out
- Added the Ground Vehicle
 - 3 UGVs made it to the Target Area
- Tested capability to fly two teams at a the same time
 - It’s gonna happen next year
- No waypoints or details until set-up time clock starts
- 10 minutes to get airborne or you are done
- First Ever Tilt Rotor to Transition
 - And not hit a motorcycle or a car!!
- Bribing Judges not only allowed, but encouraged



Some Suggestions for the future

- Read the rules, Follow the rules
 - Display altitude in FEET...Not meters, not yards, not “something” divided by 3
 - I’ve been trying to learn the metric system for about 46 years.....It’s not gonna work for me.
- Test early and often, and in the pits and even on the flight line
- If everything worked great at home, be prepared for failures at the competition...Meet Mr Murphy
- Background Music is NOT, I say NOT required for the FRR (yes this means you University of Hawaii)
- Code at home, not on the flight line...that is right, new code on flight line=airplane in the dirt
- If you are going to crash, DON’T hit the interop tent! They calculate the scores!

Team Quotes

Harvard

“We saw our plane fly”

Of the various checklists/modes that worked...”Even Crisis worked”

ETS

Clearly, this team understands how our judges work. “Our team speaks French, but we brought two translators. The are they judge Whisperers”

Embry-Riddle

Had to shake plane to start it in auto mode

From a judge “next year, consider Stirred, not shaken”

New South Wales

Left parts in his Car.....So the Lead Judge offers a Gator to take him back. He doesn't have shoes, just his socks on (no idea why), so he cancels the Gator and takes off running. Lead judge “what is he doing”. NSW team lead ‘don't worry, he is Australian’ — Runner Promptly grabs a seat and smokes a cigarette when he returns

More Team Quotes

- More NSW
 - From the Hardware guy “I built the F***ing plane, if it doesn’t work it’s the F’ing S/W guy”
- Phil—“It’s starting to get boring out here. We need more Crashes”
- Polish AFA
 - Design requirement included ability to stow aircraft in overhead bin... last year the aircraft was lost in luggage.
 - Most airdrop testing was dropping a beer. It tasted perfect.

The Joys of being Interop

- Things that Interop (aka Veronique) was hit with Phil's hat... twice
 - (Phil's) coffee creamer
 - 3 [empty, thankfully] coffee cups
 - 2 coffee cup lids
 - A soda can
 - 4 cookies
 - A laptop
 - ... and a quadcopter or two

Chief Judge Comments

- Chief Judge “If you’re in a blue or yellow shirt you get ice cream... if you’re not in a blue or yellow shirt, you get to sit and watch us eat it.”
- If your FRR video was judged by me...expect one of the following comments
 - Good
 - Pretty Good
 - Solid
 - Well, it Didn’t suck too much
- On the second wind delay
 - “You know what I think? This blows!”
 - Proceeds to laugh hysterically at his own joke.



Action Pictures

UGV Deployed!



Human Antennae trackers



AUVSI Fashion

My socks match the UAS



It's barely 88 Degrees out here, I'm glad I brought my Sweatshirt from Hawaii



It's kind of Windy out, do we have any sandbags?



And Thanks to the people that really
put in their BLOOD, sweat, and tears
(Ok, this is from last year, but come on,
it's just Great!!



Thank You

- Rick and the Civil Air Patrol Spotters
 - John Page and the Gator Drivers
 - Dustin from Mississippi State
 - Grady Fort
 - Cornell University Design and Operations team
 - Judges
 - Most of all Phil, Kim, Veronique
 - Joe 'Sure thing Tom, I will get it done' Brannan
 - Mark 'get a team on the clock Tom, yeah I Mean now' Pilling
 - Tim 'King of the Competition Central' Piester
-
- **Tom Sanders, Lead Judge**
 - And all the rest of our committed volunteers and Sponsors
 - Now for the good Stuff



AUVSI SUAS 2019



Now....Here is why you are all Here

Total Prize money to the teams this year!!!

\$50,250 paid out to the teams

Cyber Award 2018



BYU
\$250

Only team to get Auto Object Detection. One of two to get actionable intel.

Dawn Jaeger Tenacity Award



University of Split (Croatia)

\$500

Doggedly worked through multiple challenges to overcome. Entire Judging Team nominated this team from Croatia was a big candidate for the Tenacity Award.

Dr. Arthur Reyes Safety Award



Ecole de Technologie Superieure
\$500

Back-up generator, fire extinguishers, used LiPo box, used Obstacle Avoidance System to place no-fly zones over all tents, took the time to measure field elevation to verify altitude, safety buffer, lost tracking motor (antenna) mid-flight, reacquired manually and continued remainder without a hitch, vehicle programmed to always face away from GCS so safety-pilot is always aware of orientation

Just Joe Sportsmanship Award



Father Conceicao Rodrigues College of Engineering
\$500

The Mavericks UAS team asked if they could help the Hawaii team on the other flight line by explaining how to fix the bad connection problem. Lead judge allowed them to explain the fix before leaving the area so the other team (Hawaii) had a chance to succeed and not waste their entire 10 min trying to fix before launch. Mavericks UAS understood we could not help them with this problem but they still wanted to help the Hawaii team avoid the same problem. They made the best of a very bad vulnerability by helping another team succeed.

Other Money



- 3 Minutes of Autonomous Flight

1st place on the Journal



SRM Institute of Science and
Technology

10th Place



- 2nd place in Journal
 - 26th place in FRR
 - 12th place in Mission
-
- North Carolina State University \$1950

9th Place



- 51st place in Journal
 - 22nd place in FRR
 - 7th place in Mission
-
- Royal Thai Air Force Academy \$950

8th Place



- 16th place in Journal
 - 5th place in FRR
 - 9th place in Mission
-
- Istanbul Technical University, \$1000

7th Place



- 10th place in Journal
 - 1st place in FRR!!!
 - 10th place in Mission
-
- Cornell University \$1700

6th Place



- 32nd place in Journal
 - 19th place in FRR
 - 5th place in Mission
-
- Indraprastha Institute of Information Technology, \$2250

5th Place



- 7th place in Journal
 - 2nd place in FRR
 - 6th place in Mission
-
- University de Sherbrooke, \$3400

4th Place



- 18th place in Journal
 - 8th place in FRR
 - 4th place in Mission
-
- University of Cincinnati \$3100



3rd Place

- 19th place in Journal
 - 7th place in FRR
 - 3rd place in Mission
-
- Yildiz Technical University \$4700
<https://www.youtube.com/watch?v=cYvEPpGBZ40&feature=youtu.be>



2nd Place

- 14th place in Journal
- 18th place in FRR
- 2nd place in Mission

- Flint Hill High School \$5700

<https://www.youtube.com/watch?v=8gbc9uJ5Crg&feature=youtu.be>

1st Place



- 20th place in Journal
- 6th place in FRR
- 1st place in Mission

- Ecole de Technologie Superiure \$7650

<https://www.youtube.com/watch?v=9wDoku5gkv8>



Thank You for your participation