

Competition Information Update – 04/23/2019

Shipping your robot home:

The pickup address you should use for your carrier is:

The University of Alabama
 1115 14th Street
 Tuscaloosa, Alabama 35487

Your robot must be packaged/crated with the appropriate shipping addresses and labels before you leave the competition. The crate will be delivered to the address above by UA personnel on Monday morning May 13. It should be available for pickup from that address on Monday afternoon, May 13.

Check-in:

The check-in schedule is as follows:

Check-in Schedule -- Basement of North Engineering Reserch Center (NERC)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00 AM - 2:00 PM CLOSED	8:00 AM - 2:00 PM ARRIVAL CHECK-IN UNLOADING	8:00 AM - 11:00 AM ARRIVAL CHECK-IN UNLOADING			
2:00 PM - 9:00 PM ARRIVAL CHECK-IN UNLOADING	2:00 PM - 12:00 AM CLOSED	11:00 AM - 12:00 AM CLOSED	8:00 AM - 12:00 AM CLOSED	8:00 AM - 12:00 AM CLOSED	8:00 AM - 7:00 PM CLOSED
9:00 PM - 12:00 AM CLOSED					

Teams are encouraged to arrive as early in the week as possible. We only have one competition arena, so it is important that we are productive early on Monday to fit a practice run in for everyone. If you arrive in Tuscaloosa on Sunday afternoon, it would be great to get your team checked in and moved into the RoboPits on Sunday so we can hit the ground running on Monday with practice runs.

Check-in Procedure:

When you arrive, please have all the paperwork ready to facilitate a smooth check-in procedure. Your team needs to provide the following info at check-in:

- 1) Completed respirator release for all those team members planning to enter the mining arena or practice arena (1 release form for each member who will enter the mining arena or practice arena);
- 2) Completed UA media release for all attending team members (1 release for each team member in attendance);
- 3) Completed Caterpillar media release for all attending team members (1 release for each team member in attendance).

These documents will be distributed in advance via email and Slack.

Your team will receive the following at check-in:

- 1) A two-digit team number (a team member will pick a number);
- 2) Set your team SSID to TeamXX (XX is your team number);
- 2) An assigned RoboPit area (pre-assigned to the team number);
- 3) Badges for each team member (based upon info provided in advance to Caterpillar).

Moving into/out of the RoboPits:

UA has a limited number of carts to assist with moving your stuff into/out of the RoboPits. Therefore, if you have your own cart, bring it! We can provide storage for it during the week.

RoboPits Information:

The RoboPits are located in the basement of the North Engineering Research Center (NERC). Each team is allocated a space approximately 12.5' x 16.5'. There may be slight variations in one RoboPit vs another, but every effort has been made to make them as consistent as possible. Each team will get 2 tables and 4 chairs for use in their RoboPit area. The RoboPits will also have viewing areas to watch the live stream of the competition arena.

RoboPits Schedule -- Basement of North Engineering Reserch Center (NERC)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
7:30 AM - 2:00 PM CLOSED					7:30 AM - 7:00 PM OPEN
	7:30 AM - 12:00 AM OPEN	7:30 AM - 12:00 AM OPEN	7:30 AM - 12:00 AM OPEN	7:30 AM - 12:00 AM OPEN	
2:00 PM - 9:00 PM OPEN					2:30 PM - 5:30 PM EXIT ROBOPITS
					5:30 PM - 12:00 AM CLOSED
9:00 PM - 12:00 AM CLOSED					

We are encouraging teams to leave their robots in the RoboPits overnight. Our loading/unloading area is smaller than that at KSC, and we are hoping to avoid a bottleneck each morning and afternoon for teams loading and unloading robots. To help, we are extending the hours of the RobotPits so that teams can work on their robots until midnight. Security will monitor the RoboPits overnight, so your equipment should be safe.

The RoboPits are in one of the UA research centers which is open during the competition. Therefore, we request that all participants respect the space and remain in competition areas to mitigate the disruption to the rest of the building and those researchers using the facility.

Practice/Competition Schedule:

The practice and competition schedules are shown below. Note that the schedule is subject to change especially as we try to accommodate teams’ travel schedule for their second competition run later in the week.

Robotic Mining Challenge Mining Schedule -- Astrobotics Lab (BOM #4)											
Sunday		Monday		Tuesday		Wednesday		Thursday		Friday	
8:00		8:00		8:00	Practice	8:00	Team 1	8:00	Team 25	8:00	Team 19
8:25		8:25	Practice	8:25	Practice	8:25	Team 2	8:25	Team 26	8:25	Team 20
8:50		8:50	Practice	8:50	Practice	8:50	Team 3	8:50	Team 27	8:50	Team 21
9:15		9:15	Practice	9:15	Practice	9:15	Team 4	9:15	Team 28	9:15	Team 22
9:40		9:40	Practice	9:40	Practice	9:40	Team 5	9:40	Team 29	9:40	Team 23
10:05		10:05	Practice	10:05	Practice	10:05	Team 6	10:05	Team 30	10:05	Team 24
10:30		10:30	Practice	10:30	Practice	10:30	Team 7	10:30	Team 1	10:30	Team 25
10:55		10:55	Practice	10:55	Practice	10:55	Team 8	10:55	Team 2	10:55	Team 26
11:20		11:20	Practice	11:20	Practice	11:20	Team 9	11:20	Team 3	11:20	Team 27
			Lunch		Lunch		Lunch		Lunch		Lunch
1:00		1:00	Practice	1:00	Practice	1:00	Team 10	1:00	Team 4	1:00	Team 28
1:25		1:25	Practice	1:25	Practice	1:25	Team 11	1:25	Team 5	1:25	Team 29
1:50		1:50	Practice	1:50	Practice	1:50	Team 12	1:50	Team 6	1:50	Team 30
2:15		2:15	Practice	2:15	Practice	2:15	Team 13	2:15	Team 7	2:15	Exit RoboPits
2:40		2:40	Practice	2:40	Practice	2:40	Team 14	2:40	Team 8	2:40	
3:05		3:05	Opening Ceremony (3:30 - 5:30)	3:05	Practice	3:05	Team 15	3:05	Team 9	3:05	
3:30		3:30		Practice	3:30	Team 16	3:30	Team 10	3:30		
3:55		3:55		Practice	3:55	Team 17	3:55	Team 11	3:55		
4:20		4:20		Practice	4:20	Team 18	4:20	Team 12	4:20		
4:45		4:45		Practice	4:45	Team 19	4:45	Team 13	4:45		
5:10		5:10		Practice	5:10	Team 20	5:10	Team 14	5:10		
5:35		5:35		Practice	5:35	Team 21	5:35	Team 15	5:35		
6:00		6:00		Practice	6:00	Team 22	6:00	Team 16	6:00		
6:25		6:25		Practice	6:25	Team 23	6:25	Team 17	6:25		
6:50		6:50		Practice	6:50	Team 24	6:50	Team 18	6:50		
Arena is open if necessary										7:00 - 9:00	Awards Ceremony
	if necessary				marks the start of a competition round						arena is closed

Several judges are traveling on Monday. Therefore, the practice round will begin before some judges are present. When the judges are not available for a practice round, volunteers and Alabama Astrobotics students will provide support for practicing teams. Judges will handle all competition rounds. If teams have questions about getting set up for a run, ask a member of the Alabama Astrobotics Team. They will help answer your questions so that your team is prepared to get in the arena. We want everyone to be able to communicate and run their robot.

Judges' Room:

Judges will have access to a room where they can take breaks, discuss aspects of the competition, etc. We plan to have a livestream of the competition arena available in the room as well. Faculty Advisors and students are not allowed in this room unless specifically requested by a judge. The details regarding the Judges' room are provided below.

Judges' Room Schedule -- 3014 North Engineering Reserch Center (NERC)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
CLOSED	7:00 AM - 7:00 PM OPEN	7:00 AM - 7:00 PM OPEN	7:00 AM - 7:00 PM OPEN	7:00 AM - 7:00 PM OPEN	7:00 AM - 7:00 PM OPEN

Judges that we expect to participate at this time include:

Eric Reiners	Caterpillar (Head Mining Judge/Autonomy)
Rob Mueller	NASA (Head Mining Judge/Innovation)
Caleb Leslie	Caterpillar (Pit boss)
Joe Forcash	Caterpillar (Scorekeeper)
Brian Winschel	Caterpillar (Scorekeeper)
Ken Stratton	Caterpillar (Inspection)
Ralph Smith	Caterpillar (Inspection)
Michael Miller	NASA (Communications)
Joe Beardall	NASA (Arena/Control Room)
Liliana Villarreal	NASA (Arena/Control Room)
Paul Friend	Caterpillar (Arena/Control Room)
Phil Metzger	UCF (SSERVI Regolith Mechanics Award/Arena/Control Room))
Ryker Dial	Caterpillar (Arena/Control Room)
Kimberly Stratton	Caterpillar (Arena/Control Room)
Joe Minafra	NASA Solar System Exploration Research Virtual Institute (SSERVI/Control Room)
Alan Pumkiln	Caterpillar (Control Room)
Kelsey Anderson	Caterpillar (Recruiting)

Faculty Advisors' Room:

Throughout the week it is nice for the Faculty Advisors to have a place where they can sit down, do some work, check emails, etc. We plan to have a livestream of the competition arena available in the room as well. Students are not allowed in this room. The details regarding the Faculty Advisors' room are provided below.

Faculty Advisors' Room Schedule -- 2009 South Engineering Reserch Center (SERC)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
CLOSED	7:30 AM - 7:00 PM OPEN	7:30 AM - 7:00 PM OPEN	7:30 AM - 7:00 PM OPEN	7:30 AM - 7:00 PM OPEN	7:30 AM - 5:00 PM OPEN
					5:00 - 7:00 PM CLOSED

Robot Machine Shop:

UA is providing teams access to a basic machine shop for MINOR robot repairs. There will be one dedicated machinist available to manage the shop and help with necessary repairs. However, the intent of the shop is not to provide full service robot fabrication. So, teams should plan to bring their own hand tools, spare parts, and materials as usual and should plan to arrive at the competition with a completed robot.

Robot Machine Shop Schedule -- 150G Hardaway Hall					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00 AM - 9:00 PM CLOSED	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 3:00 PM OPEN
					3:00 PM - 9:00 PM CLOSED

UA Sand Pit Practice Area:

The old Astrobotics Lab is available during the week for informal testing of robots. It has an arena almost competition size with sand approximately 8-10” deep over a layer of gravel approximately 6-8” deep. There is a collector bin as well. The pit is inside an older building (Hardaway Hall) scheduled for renovation later in the summer. Therefore, the space is not pretty, but it is dry, nearly competition size, and an effective practice area that is not dependent upon the weather. Practice will be on a first-come-first-serve basis, but volunteers will monitor its use to make sure all teams that want to use the pit will have access to it. Since the pit is indoors, students will need to use respirators when they are inside the pit. Respirators are not required for those students in the lab but outside the pit. The sand in the practice pit has a high concentration of silica. Therefore UA Environmental Health and Safety requires respirators when inside the practice pit during robot testing. The respirators required for the sand pit are the same as those required for the competition arena. These will be provided at the competition. There may be a “check-out” procedure so we can keep track of the respirators. Respirators will have to be shared throughout the week.

Sand Pit Practice Schedule -- 167 Hardaway Hall					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:00 AM - 9:00 PM CLOSED	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 9:00 PM OPEN	8:00 AM - 3:00 PM OPEN
					3:00 PM - 9:00 PM CLOSED

Other Activities Associated with the Competition:

Throughout the week, there are some other activities scheduled. The reception on Monday evening after the Opening Ceremonies is for judges and faculty advisors only. All students and faculty advisors are invited to the remaining activities throughout the week. In addition to those activities shown on the schedule below, there will be informal activities sprinkled throughout the week. For example, several aerospace companies will be visiting campus to meet students.

Other Activities					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
		10:00 AM - 11:00 AM WOMEN IN STEM SERC 1014			
	3:30 PM - 5:30 PM OPENING CEREMONY Bryant-Denny Stadium				
	5:30 PM - 6:30 PM JUDGES' MEETING Bryant-Denny Stadium				4:30 PM - 6:30 PM AUTONOMY WORKSHOP 1026 HM Comer Hall
	6:30 PM - 8:00 PM RECEPTION Bryant-Denny Stadium				7:00 PM - 9:00 PM AWARDS CEREMONY Ferguson Center Ballroom

Collector Bin Update:

The collector bin in the arena is being constructed out of metal. The external dimensions should match those specified by NASA, except the bin will extend on all four sides down to the top of the regolith. Therefore, there is no way for a robot to get “under” the bin. The internal dimensions (slope angles, etc.) may not be exactly the same as the bins at NASA. This should have zero impact on your robot because what each robot sees should match the NASA specs. Additional updates will be provided once the collector bin is actually fabricated and installed in the arena.

Gravel Scales:

Networked scales have been purchased for weighing the gravel in real-time during a competition run. However, in the case the scales are not delivered on time, an old-school, low tech procedure will be used to report the gravel mass to the operators in the control room area. In either case, it is our goal to provide real-time gravel mass to the operators and, if possible, the spectators.

NASA RMC Virtual Presentations:

Based upon the NASA RMC Virtual requirement to submit a video of the presentation, teams should be able to record their video before traveling to UA. Therefore, UA will not be providing a room for live presentations or video.

Specific Respirator Information:

The UA Environmental Health and Safety Office is requiring that each person that enters the competition or practice arenas wear a half-face respirator with P100 cartridges. Head-to-toe PPE coveralls and goggles are also required for competition runs. UA will be providing these during the challenge week. However, the respirators will have to be shared among teams. Alcohol wipes will be provided to clean respirators between uses.

List of Participating Teams as of 04/23/2019:

Please let us know if you see any necessary edits to the list of participating teams.

School Name	Team Name
Cal State Long Beach	Forty Miners
Case Western Reserve University	CWRUbotix
College of Dupage	Engineering and Technology Club
Colorado State University	RAM Robotics
Iowa State University	Cardinal Space Mining Club
John Brown University	Eaglenauts
Marquette University	Marquette Aerospace and Robotic Systems (MARS)
Montana State University	Bridger Robotics
New York University Tandon School of Engineering	NYU Robotics Design Team
North Dakota State University	NDSU Bison Robotics
Oakton Community College	Oaktobotics
Penn State University Behrend	Behrend Robotics
Purdue University	Lunabotix
South Dakota School of Mines and Technology	Moonrockers
The University of Akron	UA NASA Robotics
The University of Alabama	Alabama Astrobotics
University of Alaska, Fairbanks	Aurora Robotics
University of Arkansas	Arkansas Razorbots
University of Illinois at Urbana-Champaign	Illinois Robotics in Space (IRIS)
University of Kentucky	Kentucky AstroRobotics Terrain Systems (KATS)
University of Minnesota	Northstar Robotics
University of Nebraska-Lincoln	
University of New Hampshire	Lunacats
University of North Dakota	Raptor
University of Tulsa	Tulsa Robotics Mining Crew
University of Washington Bothell	TrickFire Robotics
Vanderbilt University	Vanderbilt Robotics
Virginia Tech	VT Astrobotics
Youngstown State University	Penguin Robotics
York College CUNY	The Fighting Cardinals