



New Mexico Mathematics, Engineering, Science Achievement, Inc.

New Mexico MESA USA Logistics Guide



Designing for Equity In Your Community

April 26, 2023

In Person: NM Tech; Socorro, NM

Virtual: Zoom

Official Logistics Guide



MESA USA GENERAL INFORMATION

For 2023, the MESA USA Event will be held as a separate event from the MESA Day Competition as part of New Mexico MESA's Competition Series. For full rules on either MESA Day or MESA USA please consult the required handbooks. This addendum serves as the official New Mexico Specific Logistics Guide that is to be used in tandem with the National MESA USA Handbook. All rules and guidelines detailed in the National Handbook are to be followed for the competition. This document will only contain information not included in the National Handbook.

COMPETITION OVERVIEW: The theme for the 2022-23 MESA USA National Engineering Design Competition is: *Designing for Equity in Your Community*.

For this project, student teams will identify an individual or group who experiences some type of inequity (i.e., a user). Teams will employ human-centered design practices to engineer a solution. Teams **must use a coding component** as the main component of their design. Teams must use a **community centered** issue for their project. Examples of *Designing for Equity in Your Community* can be (but are not limited to) projects that address:

- A physical or learning disability;
- Food scarcity;
- Access to healthcare;
- Access to clean water or other resources;
- Access to employment or education; or
- A social inequity.

The components listed below will be used to assess the effective implementation of a human-centered design approach in the context of designing for equity, effective implementation of the engineering design process, and the functionality of the prototype.

1. **Design Brief** - The objective of the Design Brief is to provide a brief, non-technical overview of the entire project. Students must use the provided Design Brief Template. ***This will be submitted at Registration and is REQUIRED to participate in MESA USA.***
2. **Technical Presentation and Interview**- The objective of the Technical Presentation and Interview is to provide an overview of the prototype functionality including a technical explanation of the mechanical operations, software operations, and integration of the two. Students will deliver a short presentation, which includes a demonstration of the functionality of the prototype, followed by a question and answer session with judges. ***This will be conducted the day of the event.***
3. **Poster and Symposium** - The objective of the Poster is to provide an overview of the project, highlight key points of the design process, discuss relevant testing and data collection, present the resulting prototype, and share recommendations for further development. Students will prepare an electronic academic poster. ***This will be submitted electronically at Registration and is REQUIRED to participate in MESA USA. Teams may print their poster if they want for use in their Technical Interview, but grading will occur in advance.***
4. **Prototype Pitch** - The objective of the Prototype Pitch is to convince the audience that the design meets the user's needs and has value as a product to address an issue of inequity. Students will prepare a creative, engaging presentation to pitch their prototype to an audience, including a group of judges. The presentation should define the problem; should show how they address the theme of

Designing for Equity in Your Community; provide a detailed description of the user and their needs; discuss current solutions to the problem and their weaknesses; and provide a demonstration of their prototype highlighting its advantages. ***This will be conducted the day of the event.***

ALL TEAMS: Each team will be composed of 2-4 students. *Because some items are due prior to competition, teams must be determined by the initial registration deadline.*

- Final team members must be declared when submitting the final registration materials and required items. No changes, alternates, or additions are allowed after this point.
- Any team that requires any particular accommodations must make a request to NM MESA when submitting the final registration materials.
- The 1st Place overall winning teams in both the middle school and high school level will be chosen to represent New Mexico in the 2023 MESA USA National Engineering Design Competition in June, 2023 hosted by New Mexico MESA. Only members that attend and participate in the State Competition will be allowed to participate in the National Competition. No changes or additions are allowed.
- The 2023 National Competition is currently planned to be live this year, but may convert to virtual if needed dependent on state conditions. It is currently scheduled for June 26-29, 2023 in Albuquerque, New Mexico.

It is suggested to start with a team of 4 in the event a member cannot participate in the State and/or National Competition. Team names MUST be declared as follows: (School) (Level) – (Team Unique Name). *Example: Mesaville High School – Team Potter or Mesaville High School Team Potter*

COVID POLICY: The only events held in person will be the Technical Interview and Prototype Pitch. A team must select if they will be in person or virtual for this component at registration. The entire team is required to participate in the same chosen format (all team virtual or all team in person). If needed, a team can move from in person to virtual due to change in school requirements. But, due to the timing needed for transportation, meals, and lodging, a team may not change from virtual to in person. If team(s) require lodging/transportation, any cancellation of items need to be done by April 14, 2023 end of day to allow for adequate cancellation time.

If an individual student cannot attend (virtually or in person) for any reason, the remaining team members will complete the event. If an entire team is unable to compete for any reason (virtually or in person), makeup events will not be arranged. If they submitted items at registration, the team's submitted items will still be included in that event for consideration and an "Other Competition Credit" in MIMS. If a student does not compete at the live state event, they are not eligible to participate in the national event should the team win.

ELIGIBILITY: All participating teams must come from official New Mexico MESA School Programs. Schools must be considered official, and advisors must enter all A-0 forms by **Friday, April 7, 2023 at 5PM.** Only the students that have their A-0 submitted will be eligible to participate. **NO EXCEPTIONS!**

Of Special Note to Middle/Junior High Schools serving 9th grade students – Each middle/junior high school that includes a 9th grade class is allowed to have an event team with a maximum of 50% 9th grade students. These teams will compete in the Middle School division **only.** **No** 100% 9th grade teams will be allowed in middle school competition.

ATTENDANCE AND QUALIFICATION: All schools will be allowed to participate in MESA USA as follows. Please use the table to determine the number of teams your school can bring.

MESA USA Track	
Small School: <= 30 profiles	Max number of teams=1
Large School: >=31 profiles	Max number of teams=3

PLAGIARISM AND ADVISOR POLICY:

Academic honesty and personal integrity are essential to ensure future success as college students and STEM Professionals. As such, NM MESA expects that the work will be solely the work of the students. If the work or ideas of another are used to further students’ work, then proper credit must be given to the owner. Failure to do so will result in an act of Plagiarism. If it is determined that a student committed plagiarism, they will be disqualified from the competition and will be ineligible to receive any awards. They may also risk further sanctions from MESA USA and/or their MESA State.

All questions/concerns must be addressed by the student team (not the advisor) to the Event Coordinator at the time of the Event.

STATEWIDE OFFICE MIMS CREDIT:

Students that submit items at the initial registration deadline will receive an “Other Competition” Participation Credit in MIMS. Students that actually compete in the MESA USA Event will receive a MESA USA Participation Credit in MIMS as it is the qualifying event for our National MESA USA Competition.

AWARDS: (Middle and High School)

Overall Teams: Placing 1st-3rd Overall

- Trophies will be awarded to the top 3 overall teams (1st-3th Place).
- Awards will be presented to individual team members placing 1st – 3rd Place.
 - 1st Place-Will represent Team New Mexico at the Nationals Competition. Also will receive a Windows Based Laptop Computer or \$150 Gift Card
 - 2nd Place-\$100 Gift Card
 - 3rd Place-\$75 Gift Card
 - NOTE: A team must accept representing New Mexico at our National Competition to receive 1st place package. Otherwise, they will forfeit to the next level winner and will receive a different prize package.

Individual Event Awards:

- Plaque Awards will be presented to the top team in each individual event (1st Place).
- Additional awards may be provided.

IMPORTANT: Awards will not be presented at the MESA USA Competition. To ensure accuracy and to accommodate competing schedules, final scoring will occur upon the conclusion of the event and a live virtual announcement will be done at 4:00 PM on April 27, 2023.

DISQUALIFICATION: Individual event teams can be disqualified for the following:

- Any team member not having a Student Profile (A2) in database or A1 on record
- Anyone else completing or helping with task that is not the registered team
- Prohibited advisor, parent, or other “outside” assistance in events
- Lead judge disqualifies an event team for not following event guidelines
- Unauthorized use of cell phones during event(s) to include phone calls, internet, and/or texts
- An event team is found to have violated event guidelines after competition has concluded
- General inappropriate behavior at any time during the competition

- If after competition is concluded, it is found that any team violated rules or requirements for any event, they may be disqualified from competition and will forfeit any qualification or placement spots they may have earned.

ADDENDUMS AND EVENT RESOURCES: There are several addendums and resources which will be useful in preparing for MESA USA. All addendums will be available on the NM MESA-MESA USA Event Website. These include:

- Any Final Logistical Information
- Link to National MESA USA Page
- Event Resources and Helpful Preparation Information
- MESA USA Frequently Asked Questions (FAQ)
 - Will be changed throughout year as questions arise

It is the responsibility of the school program to periodically check for resources and updates. Before competition date, it is STRONGLY encouraged as the FAQ section will contain any clarifications and/or addendums to the event handbook and these will be followed at competition. The FAQ document is an official MESA USA Document and is the official addendum to this handbook.

MESA USA REGISTRATION: This is required for any team wanting to attend MESA USA. All qualification registration and submittal of materials will be done via the Cvent System with a direct link on the MESA USA Event Page on the NM MESA Website. **ALL REGISTRATION WILL NEED TO BE SUBMITTED ELECTRONICALLY BY FRIDAY, APRIL 7, 2023 at 5PM MST.**

NOTE: It is a separate registration and deadline from MESA Day. NM MESA STAFF has the authority to cancel attendance for any team if they do not have completed projects and/or are not prepared to attend MESA USA up to the date of the event.

There is not a registration form collected in hard copy, but the following information will be needed to complete on-line registration. (1) Registration will be done per school and will collect all needed information for MESA USA participation.

Information You Will Need Per School Registration:

- How many teams you are bringing (and eligible for)
- What format will you be participating in? In Person or Virtual?
- Unique Email Address
- School Name, Level (HS or MS), Region
- Advisor Information and Contact information (phone, email, mailing address)
- Student Names and Contact Information (emails)
- Any specific team requests and/or information
- Transportation Information (if Needed)
 - Vendor Information, Contact Name, Email Address, Mailing Address
 - Cost of Transportation
- Lodging Plans (if Needed)

Team Submittals You Will Need to Upload Per Team in School Registration:

- Design Brief Completed Template:
 - MUST be submitted in Portable Document Format (.PDF) as (1) Document.
- Academic Poster
 - MUST be submitted in Portable Document Format (.PDF) as (1) Document.

CONTINUING PROJECTS: All projects must be new and original. Teams cannot continue working on a project started in previous years.

LODGING: For each student team participating in MESA USA and living more than (120) minutes away, lodging will be provided upon request as follows:

- (1) Shared Advisor Room (2 per room)
- (1) Private Bus Driver Room (if Official Driver and not Advisor)
- Shared student room(s) per gender with up to (4) students in each room.

FOOD: (1) meal voucher will be provided per competing student and school advisor that attend the in person event. Voucher will be provided for the NM Tech cafeteria. No other meals will be provided.

TRANSPORTATION: Transportation will be provided according to the current NM MESA Transportation Policy and reasonable bus-pooling may be expected with other schools from their district and/or area schools. If a school district has specific requirements that NM MESA is unable to accommodate, they may be responsible for financial assistance with transportation. Smaller vehicles and/or suburban use is recommended for smaller teams.

TRAININGS: Technical trainings will be available to teachers in December 2022/January 2023 on Arduino, Micro:bit/Circuit Playground Express, App Development, and Website Development. There will also be Help Desk Sessions closer to competition as support for the MESA USA Event.

In addition a National Training will be provided at the 2022 MESA USA Winter Convening on December 10, 2022 that will cover all aspects of the event including preparation.

GENERAL AGENDA:

Teams will be assigned check in and competition times. Consideration will be given to accommodate travel logistics as best as able in scheduling times for the event. In person teams should prepare to participate in the Technical Interview and Prototype Pitch consecutively in an attempt to minimize wait times and staging. There will be no scoring advantage to participating in person or virtual as it will be the same judging panel for both formats.

MESA USA COMPETITION GENERAL AGENDA

Wednesday, April 26, 2023

NM Tech; Socorro, New Mexico

TIME	Description	Zoom Link
8:00 AM	Event Kickoff and Welcome: All Participants Log In	<i>Virtual - TBA</i>
8:30 AM	Judges Report for Event Orientation	<i>In Person</i>
	Advisors Meet with Teams Individually as Needed	
9:30-4:00 PM	Check In and Event Competition Assigned Times	
	Prototype Pitch	<i>Virtual and In Person</i>
	Technical Interview	<i>Virtual and In Person</i>
<i>Awards Ceremony (April 27): VIRTUAL VIA ZOOM</i>		
4:00 PM	Awards Ceremony: All Participants Log In as Desired	<i>TBA</i>

NOTE: The length of the event is determinant on the final number of registered teams. Agenda may be altered to accommodate any change in event time as needed. Exact room locations and competition times will be provided closer to the event.