



NM Mathematics, Engineering, Science, Achievement (NM MESA), Inc.

31st Annual MESA Day

Albuquerque Convention Center-Albuquerque, New Mexico

April 17, 2019

VOLUNTEER INFORMATION

It is that time of year again where NM MESA is once again looking for volunteers for their annual MESA Day event. This year our MESA Day Competition have (2) simultaneous event tracks for our students to participate. One will be a MESA Day Track with general STEM competitions and one will be our MESA USA Track, which will serve as a direct qualifier for our National Engineering Design Competition.

TIME COMMITMENT: Most volunteer roles will require an all day commitment from 7AM-3PM. Breakfast, Lunch, and Parking will be provided. Limited roles are available from 8AM-12PM, 11AM-3PM, and from 7AM-9AM. Please indicate during registration your availability.

COMPETITION OVERVIEW: All of our events will address the topic of Food as a Grand Challenge. Majority of our roles do not require any technical background and ALL volunteers are welcome. For the MESA Day Track, all roles are designed for general volunteers. For the MESA USA Track some roles require some technical/business background. Please indicate during registration your experience/preference to help with placement.

MESA Day Track-Teams will compete in 4 events:

- **On Site Science-Eatery Science Escape:** Work with your team to crack food chemistry, science and packaging mysteries during this escape session designed to challenge and nourish your STEM students. Teams will need creativity, adaptability and a delicious sense of dietary delight to succeed in this culinary code cracking event.
- **On Site Math-Farmers Math: A Sum of the Real Dirty Work!** Have you ever wondered how food gets on your dinner table? In this challenge, you will learn the process and the importance behind farming and agriculture by using a set of skills to be an effective farmer. Students will work in groups to investigate, read data, calculate, and perform related tasks to solve real world problems in the field of farming and agriculture.
- **Prepared Design-Fly Over Operational Delivery System: FOODS.** Teams will design and build a Delivery System Device that they will bring with them. The device will launch a “food supply” (confetti egg) to a given target. Teams must also design and build a Delivery Package for safely transporting the egg.
- **On Site Engineering-Bring Your Own Junk: Let’s Get Mobile!** This On-Site Event will test students’ building skills. Teams will bring junk items needed to build a device that will carry out certain tasks pertaining to the MESA Day theme.

MESA USA Track- Teams will compete in 3 events On Site and 1 event will be graded prior (Report):

Arduino Based Solutions for Humans asks students to implement the Human-Centered Design approach to find a client in their community who has a need, engineer a solution for this need using Arduino as the key component, and present their solution and recommendation(s) for next steps.

- **Technical Presentation & Interview-** The objective is to provide an overview of the prototype functionality including a technical explanation of the mechanical operations, software operations, and integration of the two.
- **Poster & Symposium** - The objective is to provide an overview of their project, highlighting key points of the design process including relevant data, presenting the resulting prototype, and share conclusions and recommendations for further development.
- **Prototype Pitch** - The objective is to prepare a presentation that demonstrates the business value of the product including a market analysis and marketing plan.

NM MESA Roles-PRIOR TO COMPETITION, NO ON SITE REQUIREMENT: This role does not require actual attendance at our MESA Day event and can be done from anywhere on a flexible time frame. The only technical requirement is an internet connection that can review PDFs. All judges will be trained via webinar session(s) as needed and will be provided with adequate grading instruction via email/webinar. Assignments will be made and items will be emailed on March 25 with a due date for return of April 12. Each judge will be assigned up to 10 items to grade. Each item takes an average of 20-30 minutes resulting in a maximum 5 hour commitment over a 3 week period.

- **MESA USA Track Project Report** - Students will write a 5-10 page report that details the design process and demonstrate key points of the process and why design choices were made.

Any Questions—Anita Gonzales, NM MESA Program Coordinator. O: 505-454-3027, C: 505-718-9517, E: anita@nmmesa.org.

All registrations for need to be completed no later than 8:00 AM, April 15, 2019.

To Register: <http://www.cvent.com/d/r6qwbx>

Thank you for helping to “Build Tomorrow....Today!”