



# VISION

Building tomorrow's mathematicians, engineers and scientists...today  
www.nmmesa.org

## STEAM Extravaganza!

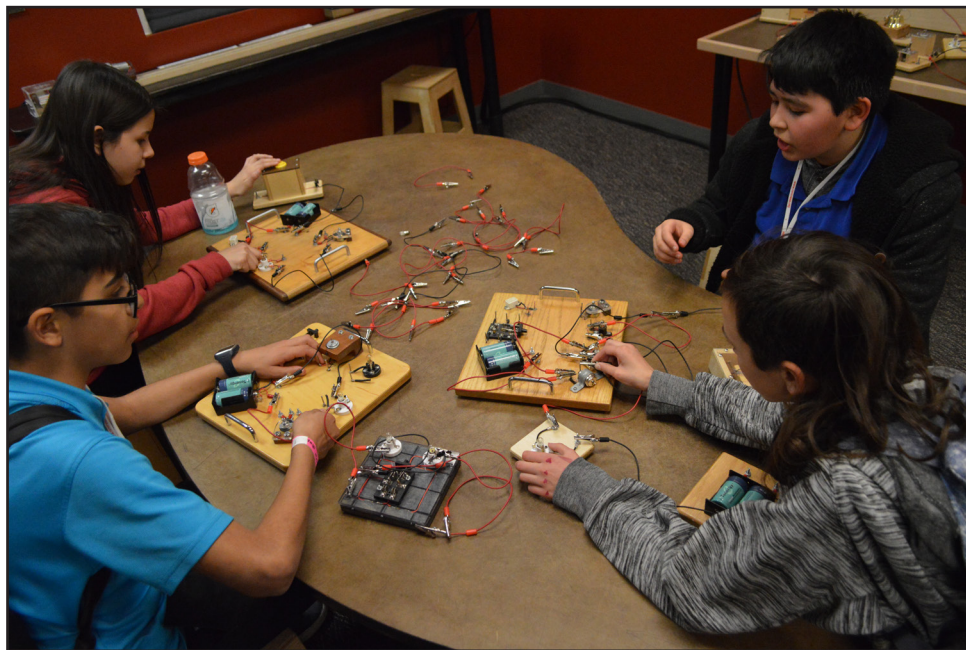
### Top Performing MESA Programs Honored at Inaugural Event

Anita Gonzales

Over 350 students and teachers from 12 NM MESA programs traveled from across New Mexico to participate in the inaugural NM MESA STEAM Extravaganza in Albuquerque. Each of the six geographic NM MESA regions selected one middle school and one high school as an outstanding program for their region. They were selected based upon current overall accomplishments including programming, performance requirements, student activity, support by school administration, Regional Coordinator recommendation, amount and variety of programming, student participation, and more. The event was a great incentive to provide to some of the state's top performing programs.

School groups participated in 2 days of STEAM activities and experiences around the Albuquerque area. Over 200 staff and volunteers helped to ensure this program was a success. During their experiences and workshops, students were able to participate in hands on STEAM activities, visit with industry professionals, and celebrate the world of STEM education.

Activity sponsors were Sandia National Laboratories, NM Elks Association, Main Bank, Pizza 9, and additional private donors.



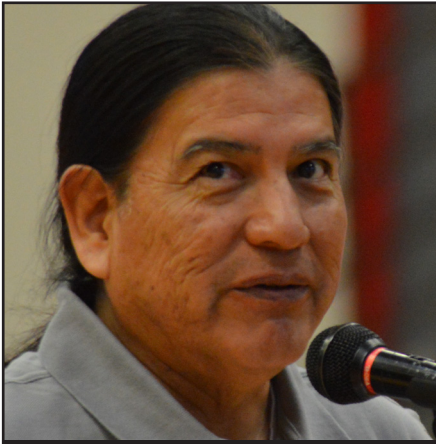
MESA students work on a project at Explora Museum during the STEAM Extravaganza

Activity partners were NPS-Petroglyph National Monument, Intel, Sandia National Laboratories, UNM College of Engineering, UNM Neurosciences, UNM Health Sciences and Orthopedics, Brain Hackers, Northrop Grumman, PNM, BEMP, National Hispanic Cultural Center, AFRL/La Luz Academy, Explora Museum, Sandia Peak Tramway, and the International Balloon Museum.

Attending schools included: Van Buren Middle School, Valley High School(Central Inner Region), West Las Vegas High School, Carlos F. Vigil Middle School (North Region), Crownpoint High School, Mesa Alta Jr. High School (West Region), Goddard High School, Berrendo Middle School (Southeast Region), Truman Middle School, Atrisco Heritage Academy High School (North Central Region), Deming High School, Red Mountain Middle School (Southwest Region).

# Executive Director's Welcome

Toney Begay



Hello, NM MESA Advisors, Students and Supporters,

This year's decrease of regions from seven to six has gone well so far. NM MESA is still providing the excellent service for which we are known throughout the state. NM MESA has several annual requirements, which are in the process of being wrapped up. The annual performance review for our staff was successfully completed. Additionally, the Board of Directors has approved a new Strategic Plan. This plan is slightly different in that it was developed by the NM MESA staff and approved by the Board. We hope this document will guide us for the next several years. Another item we recently completed is the Board of Directors Training. Our Board received a half day training on their role in nonprofit governance, finance and

obligations. Feedback from the Board members indicated this was worthwhile and beneficial. We are currently developing the NM MESA Annual Report, and are looking forward to its release because it will highlight all of our successes, academic statistics, and financial position.

Looking to the spring, we are in the process of preparing for the new national MESA USA competition, the *National Human-Centered Engineering Design Challenge*. Special thanks to all the NM MESA advisors, administrators, parents, corporations, Governor's Office, State Legislators, individuals giving personal donations, Board of Directors and the staff of NM MESA.

## From the Deputy Director's Desk

Ling Faith-Heuertz

Hello MESA Community,

I want to take the time to thank our many community partners and sponsors. As we enter a very busy time of year for us in the NM MESA offices with all the events that happen between January and May, I would like to take a moment to be grateful for what we have. We not only have a very strong community of teachers, students and dedicated NM MESA staff, we have community backers who are rooting for you. While I'm on the subject of thanking, we are ever so grateful for our many relationships and donations from our community partners: Air Force Research Labs, Sandia National Labs, Los Alamos National Labs, all of whom give us immeasurable support in time, talent and donations. I keep hearing about employees from these organizations stepping forward and helping with our Regional workshops and Rallies. Thank you, all of you. You know who you are. You are wonderful role models for our students.

I am excited about one of our recent donations! We recently received a generous gift from Intel of an entire shipping pallet of [Galileo computer boards](#)! We will be distributing these to each Regional Coordinator to get to our schools. The great thing about having these is that they are hardware and software compatible with Arduino and you can match them up with Sparkfun sensors. No more hassle of trying to find the right board and the struggle of ordering and then waiting for it to ship to you. Our students will be able to let their imaginations run wild with the possibilities! I can't wait to see what students bring to next year's Annual MESA Day Competition.

Our treasures are many. Thank you to all of our communities for sharing your time, talent and resources with us to educate and excite the next generation of scientists, inventors, politicians, entrepreneurs, engineers and mathematicians.

Jamie Drummond

## Jesus Cisneros

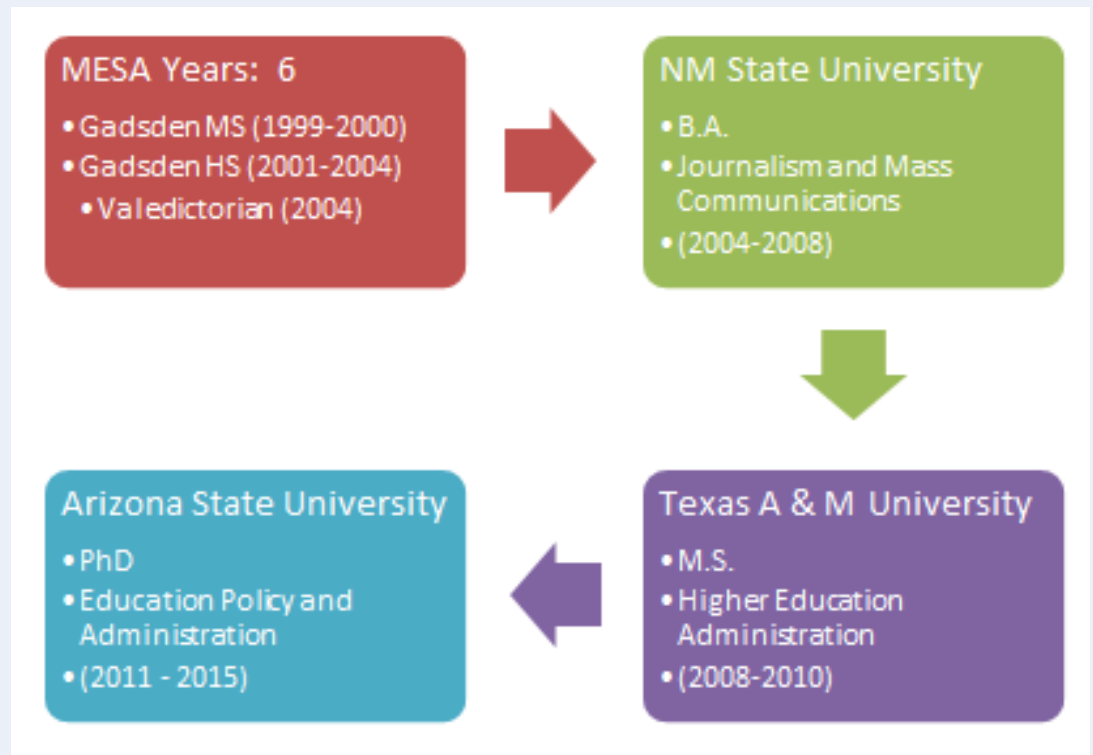
NM MESA Student Gadsden MS & HS (1999-2004)

PhD, Education Policy and Evaluation - Arizona State University (2015)



**JESUS CISNEROS**  
ASSISTANT PROFESSOR  
UNIVERSITY OF TEXAS AT EL PASO

*“FOR ME, THE MESA PROGRAM REALLY INCENTIVIZED MY INTEREST IN MATH AND SCIENCE, AND MORE SO IN ACADEMIC ACHIEVEMENT. NOT MORE IN GRADUATING, BUT ACHIEVING A GOOD GPA AND GETTING INTO A GOOD COLLEGE. THAT WAS EMBEDDED IN ME.”*



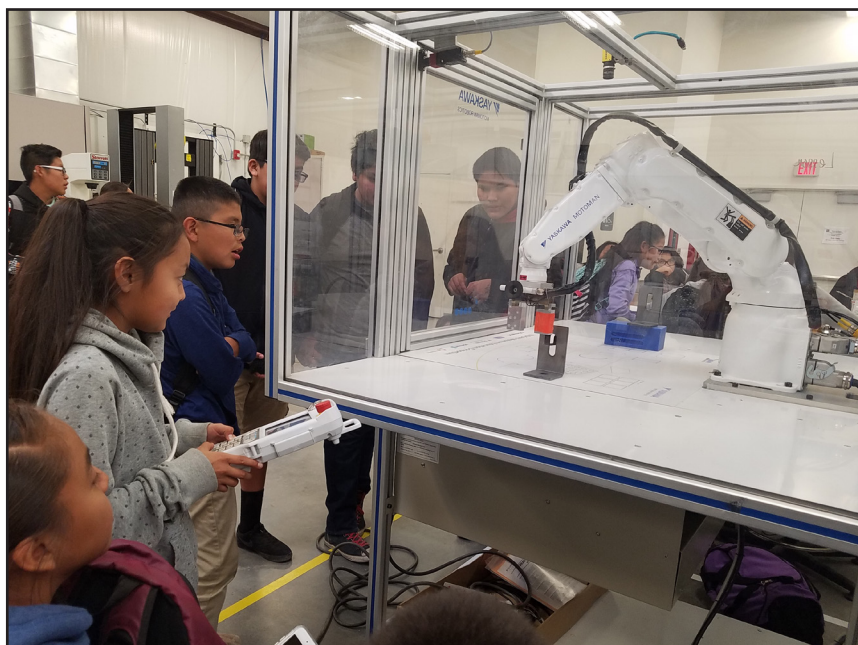
\*Jamie Drummond is NM MESA'S contract specialist for Development and Alumni Relations

# West Region Adventures

Shawndeana Smith

With the Spring semester in full swing, MESA's West Region is busy, and there have been many events to keep all the rambunctious students interested in STEM.

Students were able to enjoy various Regional Rallies in their respective areas. The schedule of Rallies in the West involved San Juan College, Navajo Technical University, New Mexico State University (NMSU) Grants Campus, and University of New Mexico (UNM) Gallup Campus, and each location had a variety of STEM experiences and opportunities available to the students.



At the San Juan College site, for example, MESA students were able to explore the campus greenhouse as well as visit the Planetarium. Students also learned about Biology and Human Anatomy by participating in a hands-on workshop facilitated by the San Juan College Biology Department.

Additionally, at the Navajo Technical College site, students had a fantastic time at the Fab Lab which is equipped with state of the art robotics technology and a variety of 3-D printers. They also were able to build, design and program their own rovers using Arduino software.

At the NMSU Campus, students were able to take part in coding relating to both cyber hacking and gaming. They were able to play

and design various games. Students also were able to visit with the admissions office and learn how to begin their college careers by creating an application.

## 2018 NORTH REGION HIGHLIGHTS! *Alejandra Olivas*

- *MESA Day Projects*
- *MS & HS Regional Rallies*
- *Statewide Events*
- *Community Service Learning Projects*
- *Letters to NM Legislature*

Regional Rallies included six different competitions, each featuring a STEAM content area (Science, Technology, Engineering, Art and Math), and a bonus "Surprise Challenge". A large variety of professionals and community members helped bring this event together for the MESA students of the North Region. Partners this year were: Los Alamos National Lab at New Mexico Highlands University, New Mexico Department of Game and Fish, Denver Zoo/Rio Mora National Wild Life Refuge, and Math Circles Collaborative of New Mexico.

# Southeast Region Update

Betty Chancey

## NM Tech Fieldtrip:

The 2018 SE Region Spring semester started off with the annual NM Tech Fieldtrip. This year, the Southeast and Southwest Regions were invited to attend. Students from Alamogordo High School, Carlsbad High School and Goddard High School attended and had a great introduction to the NM Tech campus and academic departments.

## Southeast Rally:

The 2018 SE Region Rally was a great success with 41 teams, made of 271 students from 14 schools who competed in the region's first regional rally in several years. *A Blast From the Past* was the theme, and the event was designed to be challenging while also providing many opportunities for fun. Teams were allowed to choose three of the five competitions offered at this event, including *The Balsa Wood Bridge Prepared Design*, *The Rube Goldberg Machine Prepared Design*, *the Jellybean Toss (catapult) On-Site competition*, *the Bring Your Own Junk On-Site Competition* and *the QUEST On-Site competition*. One team's balsa wood bridge build with 1/8 x 1/8 pieces of Balsa wood held 34 lbs before their 2 minute load time expired!

## Overall High School Division Winners:

- 1st Portales HS - Team # 2
- 2nd Alamogordo HS - Team #6
- 3rd Goddard HS - Team #2
- 4th Alamogordo HS - Team #5
- 5th Alamogordo HS - Team # 4

## Overall Middle School Division Winners:

- 1st Carlsbad Intermediate School - Team #1
- 2nd Mt. View MS - Alamogordo - Team #1
- 3rd Portales Jr. High - Team #3
- 4th Holloman MS - Alamogordo - Team #4
- 5th Berrendo MS - Roswell - Team #8



*Balsa Wood Bridge testing at the Southeast Region Rally*

Teams also had the option to participate in a *STEAM Art contest* and *Poster and Spirit Award contest*.

The Southeast MESA Region staff and schools want to express gratitude to Eastern New Mexico University-Roswell, which hosted the event and provided the wonderful facilities and volunteer judges who made this event possible. Volunteer Judges were: Terry Ramirez (SW Region Coordinator), Trey Nesselrodt, Darien McGuire, Russell Baker, Doug Texter, Stephanie May, Steve Starkey, Kim Purcell,



*NM MESA visual art, created by Logan Martinez of Berrendo Middle School, winner of the SE Region STEAM Art Contest*

# Central Inner Celebrates

Kim Allen Scheerer

As fall shifted into a mild winter, the Central Inner (CI) region learned, adventured and played in some amazing STEM ways. This fall, students from nex+Gen Academy and Del Norte High School worked with local youth leadership agency Talking Talons ([www.talkingtalons.org](http://www.talkingtalons.org)). Along with additional partners like Bernalillo County Open Space and Solutions, our MESA students learned about proper planting methodologies, teamwork and working on the land. Now each time MESA students drive east along I-40 through the Tijeras pass they will know that they helped to improve the water quality and retention of the old creek, thereby affecting the larger community of the middle Rio Grande Valley!



November also highlighted the region's partnership with the University of New Mexico's (UNM) School of Engineering (SOE). SOE and NM MESA work with Raytheon to bring *MathMovesU* to campus each fall. This year, nearly 250 students from across the state, grades 6-9, came to campus to celebrate math and its integral part in everyday life. SOE undergraduate and graduate students volunteered to mentor and assist with multiple projects through the day. Raytheon supports the event by bringing staff from their Arizona offices and

providing funds for lunch and supplies. Overall, the event is very engaging, students get to work with new friends and put their engineering and design skills to the test.

The Rio Grande Nature Center has also contributed to the Central Inner story this year by hosting four of the region's six Regional Rallies. Students from around the region spent their event day working in teams for a STEAM competition. At the end of each of the events, the winning school took home a smooth Benjamin (\$100 cash)! The event sparked competition, creativity and teamwork as each team constructed a Metal Earth® one-sheet model and shared with the group. Overall, the events showed the fun that STEM students can create, as well as the ways in which communicating ideas can help to teach others.

# NM MESA Partner Profile:

Eastern New Mexico University - Roswell

[www.roswell.enmu.edu](http://www.roswell.enmu.edu)



## Mission Statement:

*Preparing a diverse community with the skills and education for success*

Eastern New Mexico University-Roswell is *The Community University*, offering online and on-campus classes in more than 80 certificate/degree programs. ENMU-Roswell also provides access to a number of bachelor's and master's degrees through ENMU. A student-centered campus, ENMU-Roswell features small classes and emphasizes personal instructor support and state-of-the-art learning technologies. Dual credit classes are available to high school students. An Early College High School is also located on campus.

## Degrees Offered:

ENMU-Roswell confers two-year Associate Degrees, as well as Certificates of Completion, Certificates of Occupational Training, and Certificates of Employability. In addition to a University Studies academic transfer program, the campus offers a wide range of technical programs providing hands-on training.

## Enrollment Statistics & Student Profile:

Approximately 65 full-time and more than 200 part-time instructors teach more than 3,000 students each semester. The average age of our full time students is 22.

## Financial Aid:

Financial aid is available for students who complete the FAFSA (Federal Application for Free Student Aid). This includes grants, work-study, loans, and institutional scholarships.

Application deadline is April 1 of each year. For information, please call: 575-624-7400.

## PROGRAMS OF STUDY:

- AGRICULTURE
- AUTOMOTIVE TECHNOLOGY
- AVIATION MAINTENANCE TECHNOLOGY
- BEHAVIORAL SCIENCES
- BIOLOGY
- BOOKKEEPING/ACCOUNTING
- BUSINESS ADMINISTRATION/ASSISTANT
- COMMERCIAL DRIVER'S LICENSE
- COMMERCIAL REFRIGERATION
- COMMUNITY HEALTH WORKER
- COMMUNITY PARAMEDIC
- COMPUTER APPLICATIONS & SUPPORT
- COMPUTER & NETWORK CYBER SECURITY
- CONSTRUCTION TRADES
- CRIMINAL JUSTICE
- EMERGENCY MANAGEMENT
- EMERGENCY MEDICAL SERVICES
- ENGINEERING & DESIGN TECHNOLOGY
- FIRE SCIENCE
- HOMEMAKER/HEALTH CARE AIDE
- HUMAN SERVICES
- HVAC-REFRIGERATION TECHNOLOGY
- MATHEMATICS
- MEDIA ARTS-ANIMATION, FILM, GRAPHICS
- MEDICAL ASSISTING AND MEDICAL CODING
- NURSING
- NURSING ASSISTANT
- OCCUPATIONAL SAFETY ENGINEERING
- CHILD DEVELOPMENT
- OCCUPATIONAL THERAPY ASSISTANT
- PARAMEDIC
- PHARMACY TECHNICIAN
- PHLEBOTOMY
- POLICE SCIENCE
- PROFESSIONAL PILOT TRAINING
- RESPIRATORY THERAPY
- TEACHER EDUCATION
- UNIVERSITY STUDIES
- UNMANNED AERIAL SYSTEMS
- WELDING TECHNOLOGY
- WORKPLACE INTERPERSONAL EFFECTIVENESS



# Top Seniors Ready to Explore New Orleans in Annual Senior Incentive Field Trip

*Anita Gonzales*

Twenty four 12<sup>th</sup> grade students and 4 teacher advisors have been selected to represent NM MESA in the 2018 Senior Incentive Field Trip (SIFT). SIFT allows NM MESA to reward some of its top seniors for their active participation in the program and for the STEM courses that they have contributed to their academic career. Selected attendees will have the opportunity to participate in a once in a lifetime STEM experience. This trip will give students a chance to: explore post hurricane construction through the New Orleans District Army Corps of Engineers; visit a variety of ecosystems through the Big Branch National Wildlife Refuge; explore technology and rocketry at the John Stennis NASA Space Center; visit cultural and historical landmarks; explore additional post-secondary education at the Tulane University School of Medicine; and more!

REGION	Name	School
NC	Carlos Aguilar	West Mesa High School
NO	Alonzo Aragon	Mora High School
CI	Sarah Aries	Valley High School
NO	Aniceto Chavez	Mora High School
NO	Corrina Cordova	West Las vegas High school
SW	Andrew Cowie	Las Cruces High School
NO	Kevin Dominguez	West Las Vegas High School
SW	Brianna Douds	Ruidoso High School
NO	Darrius Gallegos	Mesa Vista High School
NO	Esperanza Kennedy	West Las Vegas High School
W	Lynette Larson	Crownpoint High School

REGION	Name	School
W	Leanna Lee	Miyamura High School
SW	Perla Lopez	Roswell High School
NO	Christopher Lovato	West Las Vegas High School
CI	Leilani Lucero	Amy Biehl High School
SE	Joshua Mader	Ruidoso High School
NC	Mitzy Magana	West Mesa High School
NO	Luzia Manuel	Mora High School
SW	Cesar Miss	Las Cruces High School
NO	Eloy Roybal	Mora High School
SE	Elizabeth Simon-ton	Carlsbad High School
SE	Darian Tirado	Onate High School
SE	David Velez	Deming High School
SE	Caroline Williams	Las Cruces High School



# EDUCATION AND EXPERIENCE

Nicholas Kunz



Educational theorist John Dewey wrote in his 1938 book, *Experience in Education*, “The most important attitude that can be formed is that of desire to go on learning.” How do children foster a desire to learn? How do they take a piece of information and turn it into knowledge that will serve them for many years? They experience the world surrounding them. They dig in the dirt to learn about biology, draw portraits to learn each of America’s presidents, or travel in a boat under a bridge to learn about physics. The experiential educator creates such meaningful concrete experiences for students, while intentionally providing opportunities for reflective observation, abstract conceptualization, and active experimentation.

Janet Eyler, Associate Professor of the Practice of Education at Vanderbilt University points out in an essay titled *The Power of Experiential Education*, that Experiential Education goes beyond classroom study to provide a deep understanding of content, increases the capacity for critical thinking and application of knowledge, and grows the ability to engage in lifelong learning, including learning in the workplace. Modern students sometimes have trouble calling on acquired knowledge or applying recently learned information to new situations. They cannot *conditionalize* the knowledge because it’s difficult to see the relevance in their own lives. But

students who *experience* the content learn as community participants with a *need to know* in order to finish the job at hand.



**NC Region Students experiencing ultraviolet light at Santa Fe’s Railyard Park**

workplace. Modern students sometimes have trouble calling on acquired knowledge or applying recently learned information to new situations. They cannot *conditionalize* the knowledge because it’s difficult to see the relevance in their own lives. But

NM MESA provides an ideal opportunity for New Mexico’s youth to experience learning through the many enriching activities that their advisors make available to them. It is a perfect setting to try new ideas and methods that use *Outdoor Education, Service Learning, Cooperative Learning, Active Learning, Environmental Education*, and more. MESA’s talented advisors continuously demonstrate their willingness to think outside the box of tradition, and each time they create a new workshop, experiment, project or field trip for their students, they are creating rich pathways for lifelong learning!

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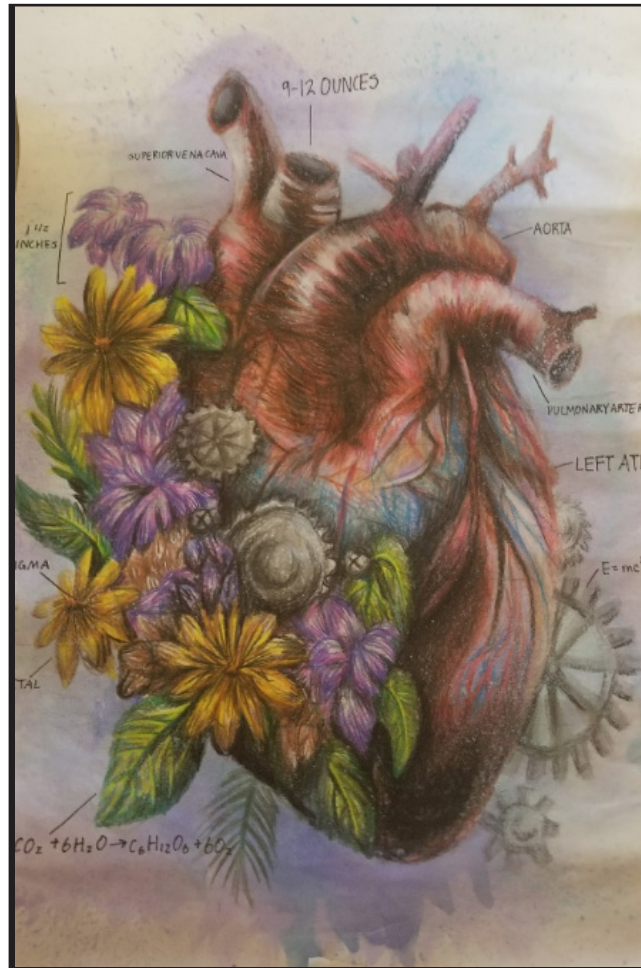
# SOUTHWEST REGION IN ACTION

Terry Ramirez

Thirteen schools recently participated in the wildly successful Southwest Region Rally, held at New Mexico State University in Las Cruces, NM. Students competed with Balsa Wood Bridges, created catapults and joined in an entertaining and informative Science Quest. Centennial High School swept the high school competition, placing 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>. In the middle school division, CC Snell walked away with 1<sup>st</sup> & 2<sup>nd</sup>, while Chaparral Middle School earned 3<sup>rd</sup> place overall. Additionally, Emily Cai from Centennial took the prize for 1st place in this year's Art Competition.

NM MESA requires programs to attend at least one non-MESA event. With this year being no exception, the Southwest has shined wherever they have gone! A few of the highlights include: Chaparral Middle School and Deming High School went to the BEST Robotics regional competition in Dallas.

Las Cruces High School participated in Science Olympiad & Vista Middle School attended the Electric Car Competition in Albuquerque. Congrats to all the teams who have represented the Southwest Region and have made NM MESA proud!



Winning Artwork by Emily Cai of Centennial HS

During MESA Day at the Legislature in Santa Fe on February 14<sup>th</sup>, Chaparral Middle School and Deming High School, winners of the MESA USA National Competition were formally recognized both by the NM House of Representatives and the NM Senate. Senator Pete Campos, Senator John Arthur Smith, Representative Nathan Small, and Representative Sarah Maestas Barnes all participated in the recognition and presentation of certificates to these champion students.

## SPRING 2018 STATEWIDE DATES TO REMEMBER:

APRIL 2: MESA DAY FINAL PROJECT REPORT DUE, 5:00 PM

APRIL 9: DEADLINE FOR SENIOR LOYALTY AWARD APPLICATIONS, 12:00 MIDNIGHT

APRIL 16: LOYALTY AWARD APPEALS DUE TO REGIONAL COORDINATORS

APRIL 20: MESA DAY, ROSWELL, NM

JUNE 19-23: MESA USA, PHILADELPHIA, PA

JUNE 30: LAST DAY FOR MESA ADVISORS TO COMPLETE MIMS ENTRIES



# FUN WITH NEW FRIENDS AT THE STEAM EXTRAVAGANZA!



## VISION

### NM MESA Executive Director

Toney Begay

### Deputy Director

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Betty Chancey, Anita Gonzales, Nicholas Kunz, Alejandra Olivas, Terry Ramirez, Kim Scheerer, Shawndean Smith

*Vision is an electronic newsletter published by New Mexico MESA. It is published by the MESA staff as a public service to all stakeholders of NM MESA and the general public. Opinions are the views of the MESA staff and those who submit articles or letters to the editor on issues of concern, or in response to any material produced in the newsletter. Submissions can be made electronically to [nkunz@nmmesa.org](mailto:nkunz@nmmesa.org). The editor reserves the right to edit any submission.*

