

Innovative Transportation, Distribution and Logistics Partnerships Webinar



February 24, 2016

Our Speakers:

- Andrea Zimmermann
- Nicole Martin
- Mike Shallenberger
- Sara Quintana

ADVANCE > CTE

State Leaders Connecting Learning to Work

Southwest Transportation Workforce Center

THE TRANSPORTATION WORKFORCE
CONNECTING AND EMPOWERING

Welcome ...

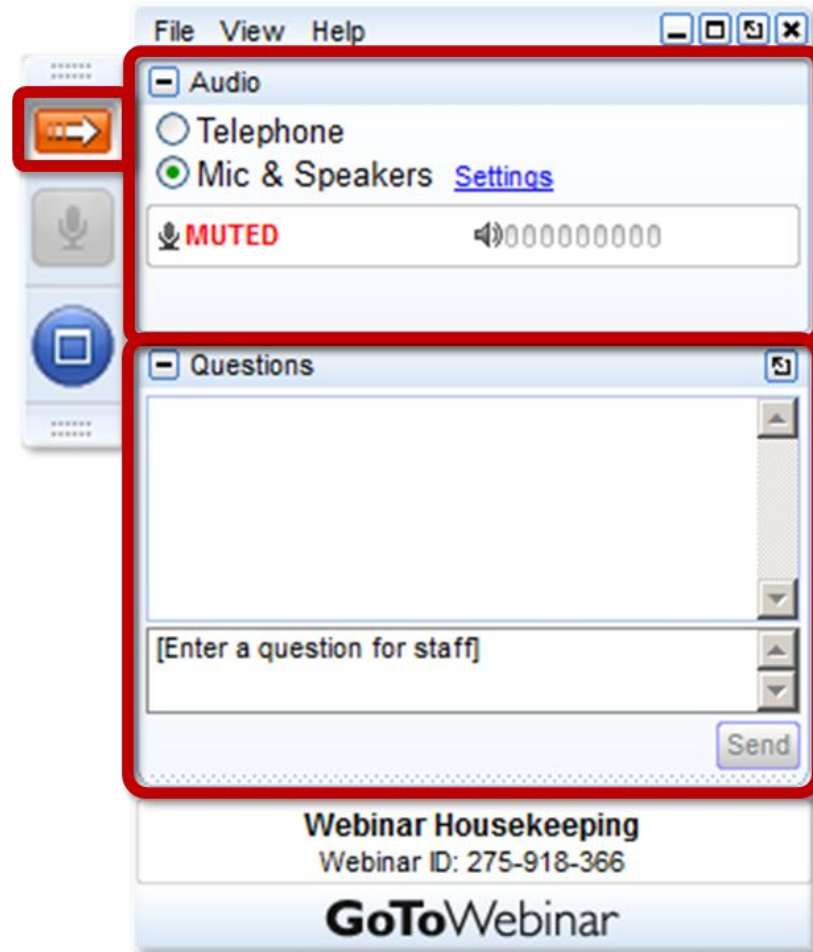
to the

Innovative Transportation, Distribution and Logistics Partnerships Webinar!

SWTWC and NASDCTE are pleased to co-host today's webinar featuring innovative TDL education programs.



Attendee Participation: Audio



Your Participation

Open and close your control panel

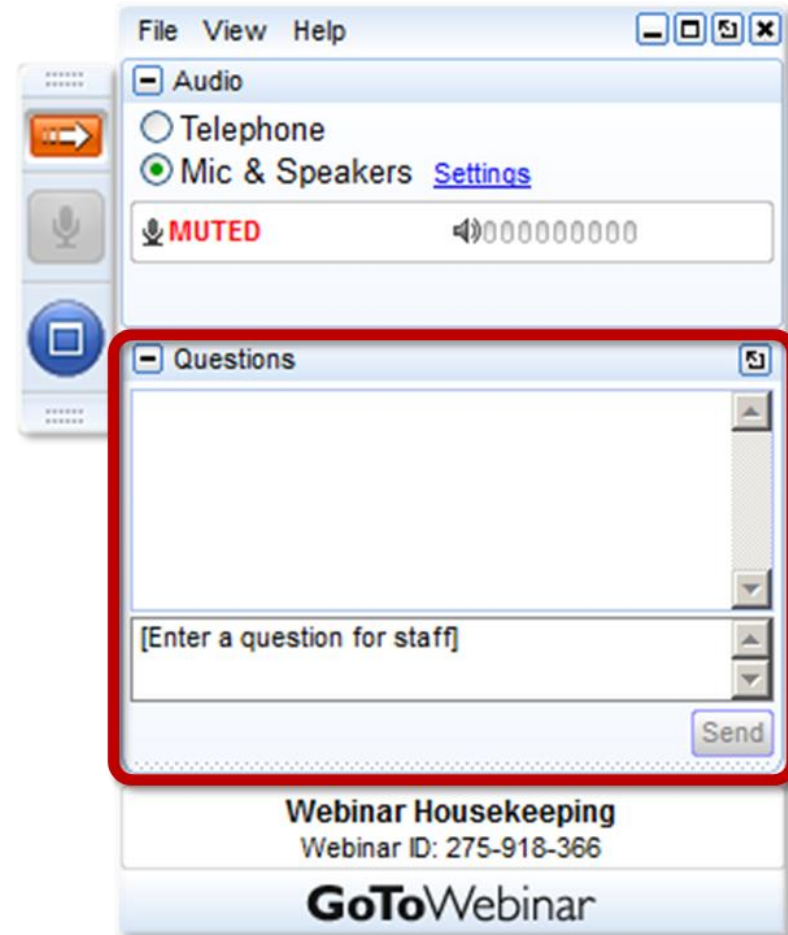
Join audio:

- Choose **Mic & Speakers** to use VoIP
- Choose **Telephone** and dial using the information provided

Submit questions and comments via the Questions panel

Note: Today's presentation is being recorded and will be posted on swtwc.org.

Attendee Participation: Questions



Your Participation

Please submit your text questions and comments using the Questions panel. We will address these questions at the end of each presentation.

For more information, please e-mail Jennifer.Tran08@student.csulb.edu.

Note: Today's presentation is being recorded and will be provided within 48 hours.



Fran Beauman

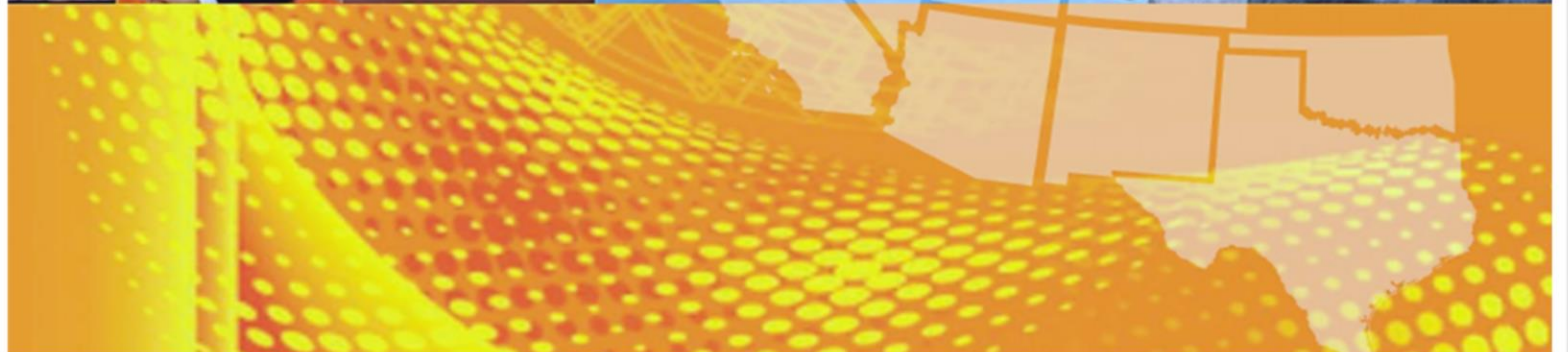
SWTWC
National Occupational
Competency Testing
Institute
K-12 Education
Consultant

SWTWC seeks to connect and empower the 21st century transportation workforce through research, education, and industry engagement.

SWTWC

Southwest Transportation Workforce Center

Connecting and Empowering the Transportation Workforce



Speakers and Topics



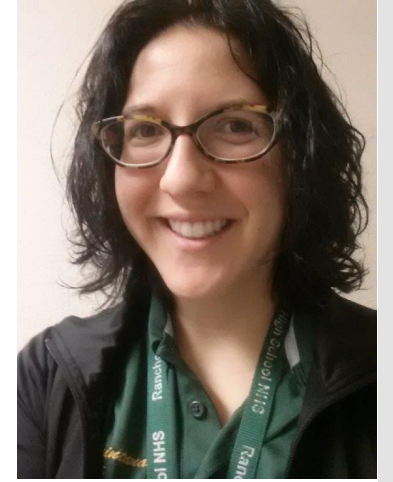
- **Andrea Zimmermann**,
State Policy Associate for Advance CTE
- Moderator



- **Nicole Martin**,
Senior Program Manager for The International Trade Academy at Phineas High School in CA



- **Mike Shallenberger**,
Transportation Engineering Teacher for the STEM School and Academy in CO



- **Sara Quintana**,
Aerospace Engineering and Robotics Teacher in NV

Andrea Zimmermann

*State Policy
Associate for
Advance CTE*

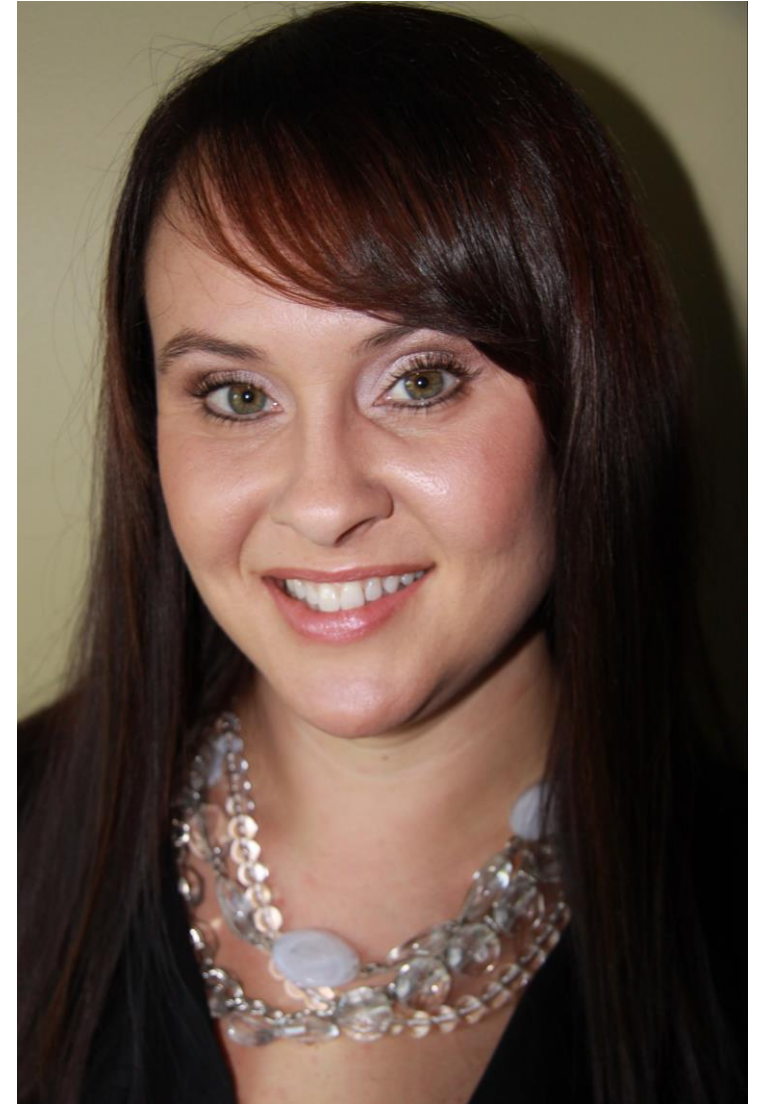
- **Andrea Zimmermann** is the State Policy Associate at Advance Career and Technical Education (Advance CTE) and is responsible for tracking major state legislative and regulatory actions affecting CTE.
- Prior to joining Advance CTE in April 2014, Andrea worked in the U.S. Department of Education's Office of Career, Technical and Adult Education and Office of Postsecondary Education. She also served three years as a Peace Corps Volunteer in Ukraine, where she taught English at a teacher's college and developed education and youth leadership programs.



Nicole Martin

*Senior Program
Manager for The
International Trade
Academy at
Phineas High
School in CA*

- **Nicole Martin** is a Senior Program Manager with International Trade Education Programs (ITEP).
- ITEP is a non-profit intermediary that brings confidence, choice, and opportunity to students seeking brighter futures. Through partnerships with area high schools, local businesses, industry and community groups, ITEP develops innovative programs that integrate internships and career mentoring with high school curriculums.





International Trade Education Programs (ITEP)
Nicole Martin, Senior Program Manager

ABOUT ITEP

Connecting students to careers

MISSION

Through partnerships with ports, transportation, logistics and related industries, ITEP prepares high school students for diverse opportunities in high-growth job sectors.

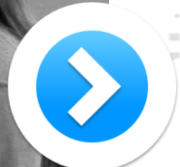
VISION

To be the premier industry-recognized intermediary, connecting business to the classroom to create success for our students, our partners, and the global economy.



ITEP Makes the Connection

Connect, Convene, Measure, Sustain



To Businesses and Donors



To Schools and Districts



To Students and Parents



To Communities

SCHOOLS & SECTORS

**Advanced
Manufacturing
& Trades**



Phineas Banning HS
(5 Academies)

San Pedro HS
(2 Academies)

Narbonne HS

Rancho Dominguez Prep

Carson HS
(2 Academies)

Gardena HS

Dorsey HS

Barstow HS

Downey Unified*

**Global
Business &
Logistics**



**Hospitality,
Tourism &
Culinary Arts**



**Law &
Government**



**Engineering,
Architecture,
& STEM**



**Environmental
Science**



*ITEP provides technical support for District-wide Work-based Learning Initiative

THE ITEP MODEL



How Advisory Boards Add Value



4,500+ students served annually

Contextualize Learning

Connect Relevant Resources to Classroom

Mentorship Coaching & Feedback

Internships Scholarships & Professional Network



\$998,298
Financial support from industry and foundations



13,724
Volunteer hours devoted to ITEP programs by **300** volunteers



Career Awareness

Students begin to discover and identify areas of interest.

- ▶ Career fairs
- ▶ *Day of Discovery* with USCG
- ▶ *GPS Your Future*
- ▶ Guest speaker series
- ▶ Workplace tours

Day of Discovery with the U.S. Coast Guard





Career Exploration

Students explore career options for motivation and to inform decision-making.

- ▶ College tours
- ▶ Professional events
- ▶ Signature field trips/study tours

Job Shadow Day





Career Preparation

Students apply learning through practical experience and interaction with professionals.

- ▶ Job skill workshops
- ▶ Industry coaching
- ▶ Student competitions



Career Training

Students prepare for employment in a specific range of occupations.

- ▶ On-the-job training
- ▶ Scholarship opportunities
- ▶ Student leadership activities
- ▶ Summer internships



Virtual Enterprise

VE is a live, in-school, global business simulation that gives students a competitive edge.

- ▶ Emphasizes collaborative learning
- ▶ Development of 21st century skills
- ▶ Students create & manage all aspects of their virtual business
- ▶ Gives students a head start on careers



The ITEP Difference

Business partners coach students to excellence



98% Of VE students say they feel more prepared thanks to industry support
VE students practice their fast pitch in preparation for competition

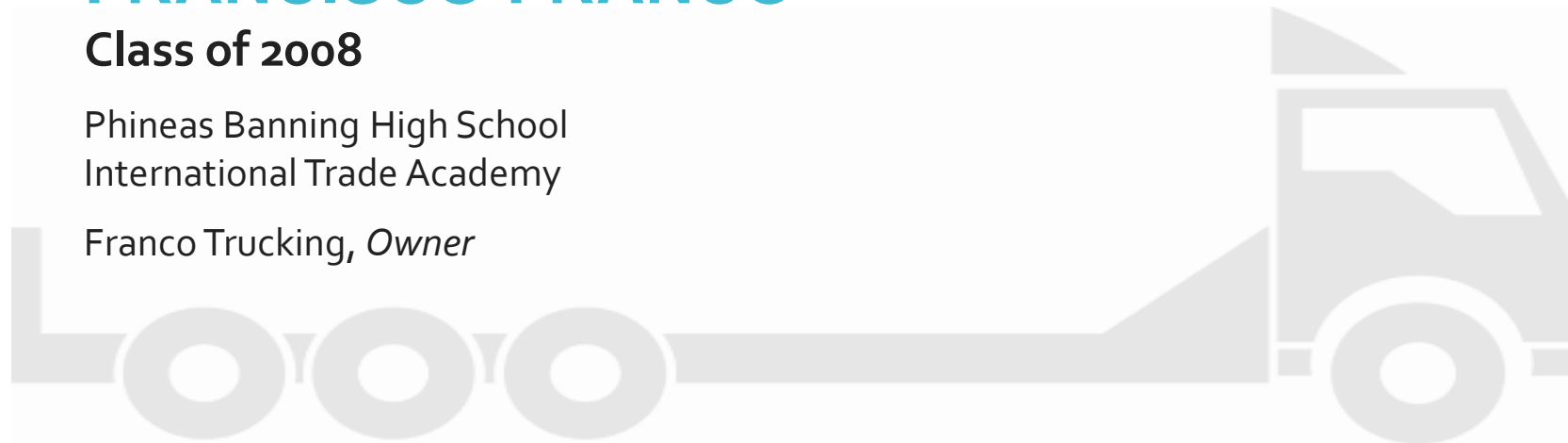


FRANCISCO FRANCO

Class of 2008

Phineas Banning High School
International Trade Academy

Franco Trucking, *Owner*





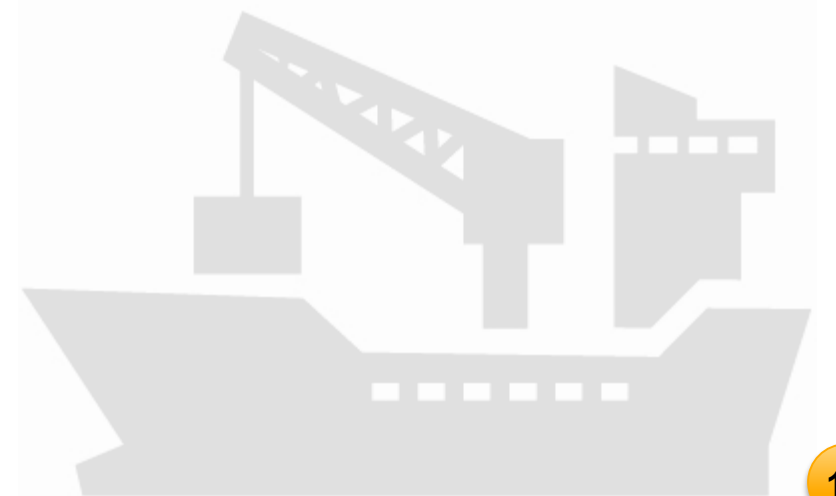
ITEP ALUMNI

SANDRA FRANCO

Class of 2011

Phineas Banning High School
Global Safety & Security
Academy

Long Beach Container Terminal
Operations Superintendent





MIGUEL CAMACHO

Class of 2011

Phineas Banning High School
Global Safety & Security Academy

Conoco Phillips / Polar Tankers, *Third Assistant Engineer*



ITEP ALUMNI

DALIA PALSSON

Class of 2003

Phineas Banning High School
International Trade Academy

Pacific Maritime Association
Labor Relations Assistant



Interested in learning more?

- ▶ Nicole Martin, Senior Program Manager, ITEP
- ▶ Tel: 424-368-7100 Ext.107
- ▶ Email: nicole@itepinc.org
- ▶ Web: www.itepinc.org

Mike Shallenberger

Transportation Engineering Teacher for the STEM School and Academy in Highlands Ranch, CO

- **Mike Shallenberger** studied Manufacturing with an emphasis in Automotive Technology at California State University at Chico.
- He has been teaching for 18 years, and recent accomplishments include Technology Student Association (TSA) Advisor of the Year for Colorado, and Rocky Mountain AIAA (American Institute of Aeronautics and Astronautics) Educator of the Year.



A stylized graphic of a pencil is positioned on the left side of the image. The pencil is oriented vertically, with its tip pointing downwards. The body of the pencil is a light grey color, and the eraser at the top is a darker grey. The pencil is surrounded by several diagonal stripes in orange and grey, creating a dynamic, geometric background.

STEM

S C H O O L

A C A D E M Y



- Opened in 2011
- Growth over 20% per year
- Ranked 11th in the state of Colorado
- CDE (Colorado Department of Education) determination of “Bright Spot”



Engineering type Teams

- TSA-Technology Student Association
- BEST Robotics (Boosting Engineering Science and Technology)
 - FIRST Robotics: FLL, FTC, FRC
 - Electrathon America
 - ULA Ball Aerospace Intern Rocket
 - TEAMS




Engineering Department Classes

- Elementary School starting next year
 - Middle School
 - MS Robotics
 - TSA



HS Engineering Classes

- TSA
- CAD, PTC Creo
- Digital Electronics (Arduino based)
 - Manufacturing
 - Robotics
- ICE and Transportation Technology



Mike Shallenberger, The STEM School

Tel: (303) 683-STEM

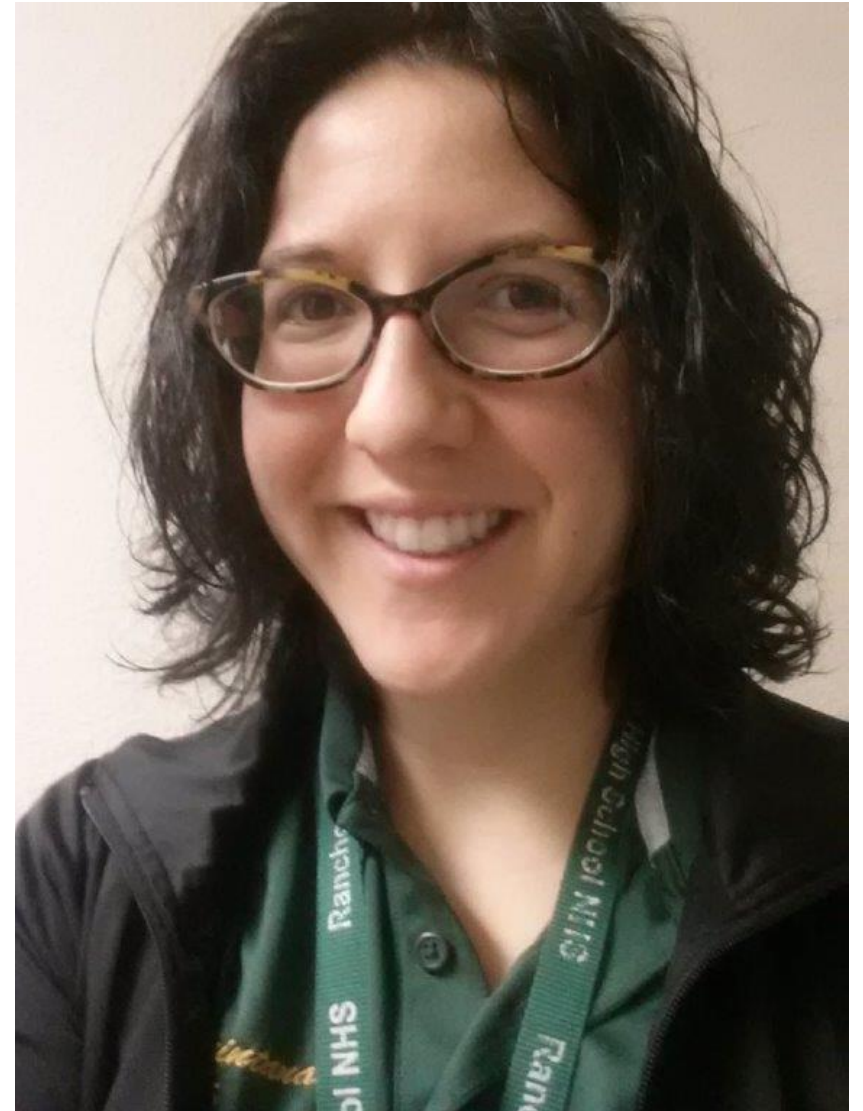
Email: mike.shall@stemhigh.org

Web: www.stemhigh.org/

Sara Quintana

*Aerospace
Engineering and
Robotics Teacher at
the Rancho High
School Aviation
Magnet Academy
in NV*

- Sara Quintana received her B.S.E in Aerospace Engineering with an emphasis in structural analysis at the University of Michigan.
- She briefly worked for Dodge Racing's NASCAR Division conducting computational fluid dynamic analyses, before moving to Las Vegas, Nevada where she now teaches aerospace engineering and robotics at Rancho High School and consults with a local off-road team, TPF Racing.



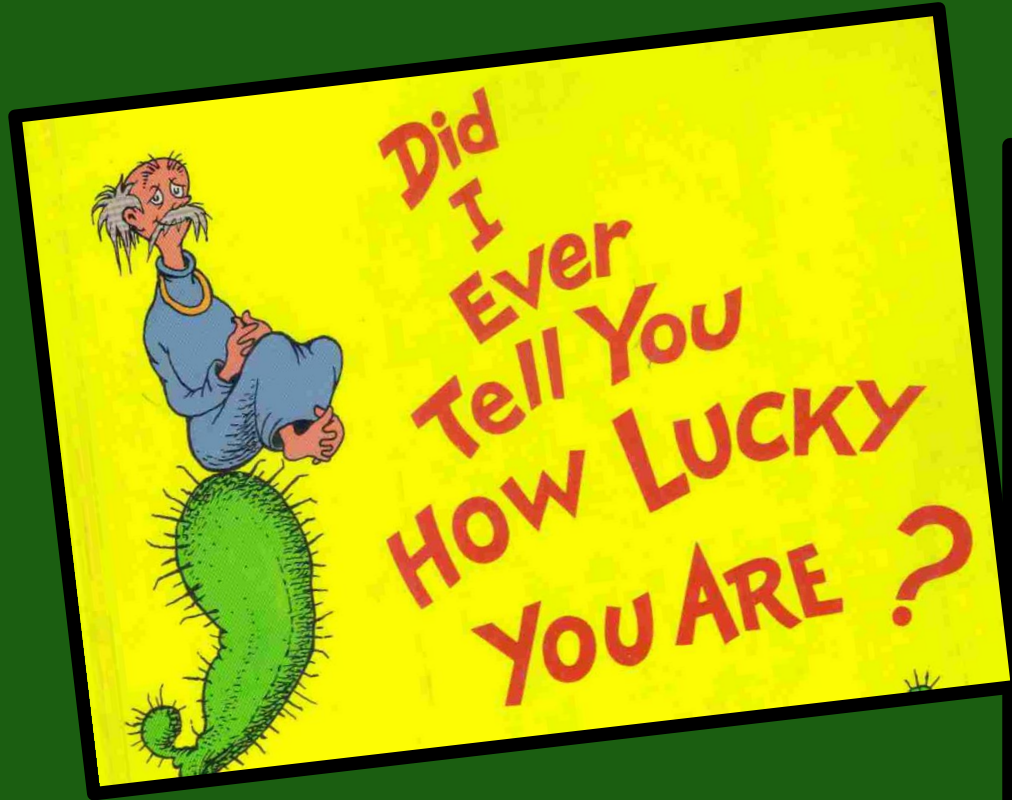
Rancho High School Aviation & Pre-Medical Academies



Established 1954

Rancho High School Information

- Located in Las Vegas, Nevada, established in 1954
- Clark County School District (CCSD), 5th largest in the country
- Comprehensive high school
 - ~3,300 students, 70% Hispanic, 10% Caucasian, 9% African-American
 - Title I School, 65% of students w/free or reduced lunch (CCSD 57%)
 - Graduation Rate: 84% for all enrolled students
 - Over 40 extracurricular clubs and activities offered
 - Real World Design Challenge National Champions (2013, 2014)
 - National Gold Student Council of Excellence (2015)
 - Gates Millennium Scholar (2013)
 - Magnet Schools of America, School of Excellence (2014, 2015)
 - Hack Arizona, Best Overall Hack (2016)
- Magnet Academy (1997)
 - First medical academy offered in district
 - Only aviation academy offered in the district
 - Academy Mission: Responsible, Achieving, Motivated, and Self-reliant citizens, who are well-rounded and well-prepared for future success.



**Total Number of
Students who
applied to
Rancho...**

2,212

Accepted in Pre-Medical - 180

Accepted in Engineering - 65

Accepted in Private Pilot - 65

Aviation Teachers



Mr. Archambeault



Mr. Johnson



Ms. Kim



Mr. Pemberton



Ms. Quintana

Aviation Course Sequencing

Grade	Aerospace Engineering	Private Pilot	Aviation Maintenance Technician (AMT)
9th	Aerospace Engineering I	Aviation Technology I	Engineering or Pilot Track
10th	Aerospace Engineering II	Aviation Technology II	Engineering or Pilot Track
11th	Aerospace Engineering III	Aviation Technology III	Aviation Maintenance Tech I
12th	Aerospace Engineering Advanced Studies	Pilot with Pilot Lab	Aviation Maintenance Tech II

Pilot Program

- History
- Aerodynamics
- Aircraft structures
- Propulsion systems
- Flight physiology
- Flight safety
- Ground school
- Pilot Lab
- Unmanned air systems (UAS) (optional)

Pilot Program

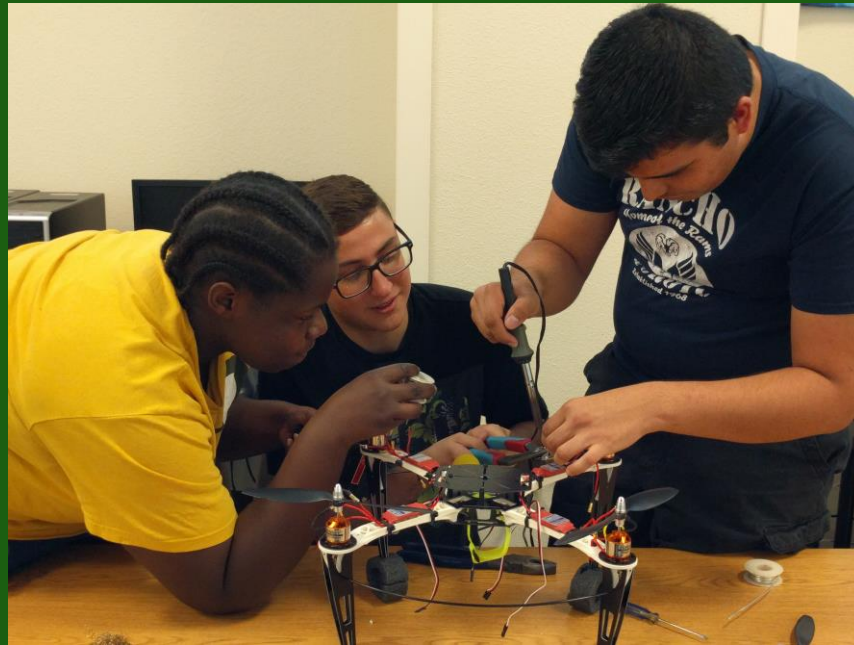
- Federal Aviation Administration (FAA) Private Pilot Exams
 - Medical exam (11th)
 - Written knowledge test (11th)
 - Oral knowledge test (12th)
 - Practical test in the airplane (12th)

First Completer of 2015-2016



Unmanned Air Systems

- Students design and build unmanned aircraft
- Currently working toward developing corporate partnerships and pilot certification



Aerospace Engineering

- History
- Engineering design process
- Physics of flight
- Aerodynamics
- Propulsion systems
- Thermodynamics
- 3D modeling
- Computer programming (C++)
- Orbital mechanics
- Space mission analysis and design
- Advanced studies

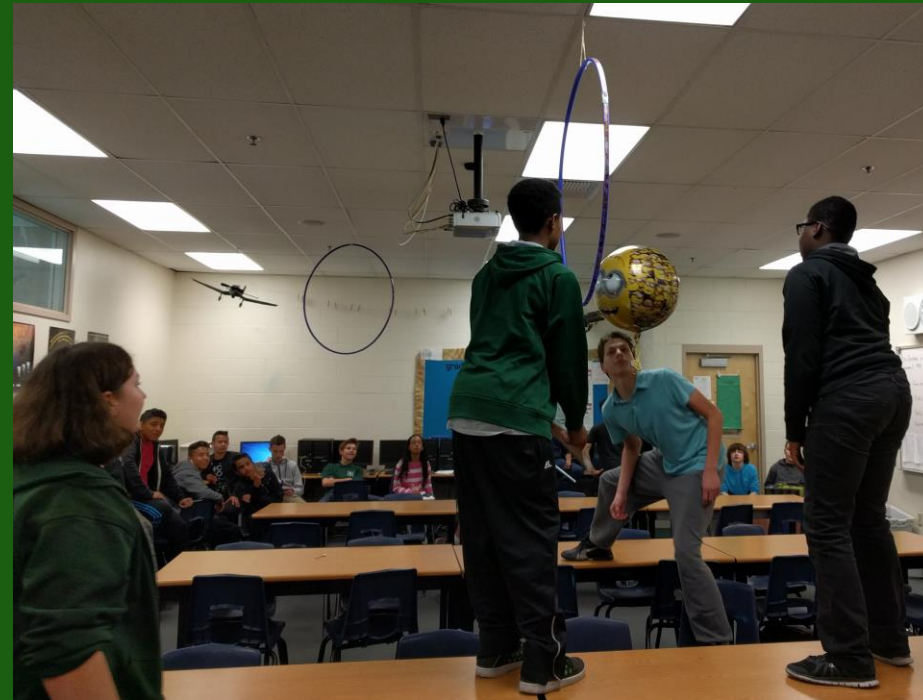
Project Based Learning

- Hydroponics Project
- Working hydroponic garden
 - Minimum of four iterations
 - Maximum budget limit of \$5
 - Formal presentation
 - Class votes on best design
 - “I Learned” Essay



Project Based Learning

- Neutral Buoyancy Lab
 - Application of Newton's Laws
 - Develops teamwork and critical thinking skills
 - Must travel from launch area through all hoops and return to launch area without touching anything



Project Based Learning

- Wing Design Project
 - Engineering students work collaboratively to create a 3D printed wing
 - Designs are given to pilots for evaluation and returned to engineers for improvement



Project Based Learning

- Energy-Mass Equivalency Project
 - Students apply Einstein's equation to model rockets built and launched in class
 - Younger students were mentored and led by seniors within the program



Aircraft Maintenance Technician

- First two years w/ pilot or engineering course
- General airframe and powerplant (A & P) disciplines as a precursor to full A & P licensure



Community Partnerships

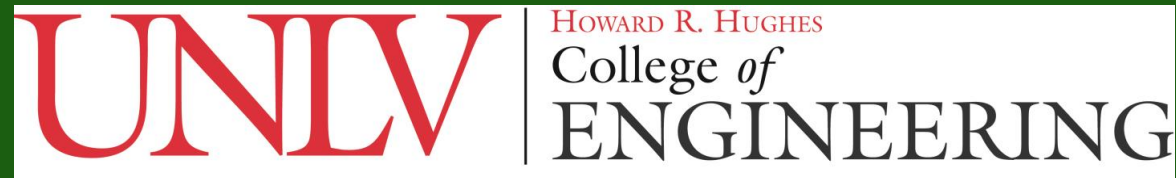
- Our program would not be possible without the support of several different companies and educational institutions
 - Embry-Riddle Aeronautical University
 - University of Nevada, Las Vegas
 - Allegiant Air
 - Dronesmith Technologies
 - West Air Aviation
 - Elite Flight Training
 - 702 Helicopters
 - Aviation Institute of Maintenance
 - 5 Star Helicopters
 - Academy of Model Aeronautics
 - Other CCSD schools

Educational Partnerships

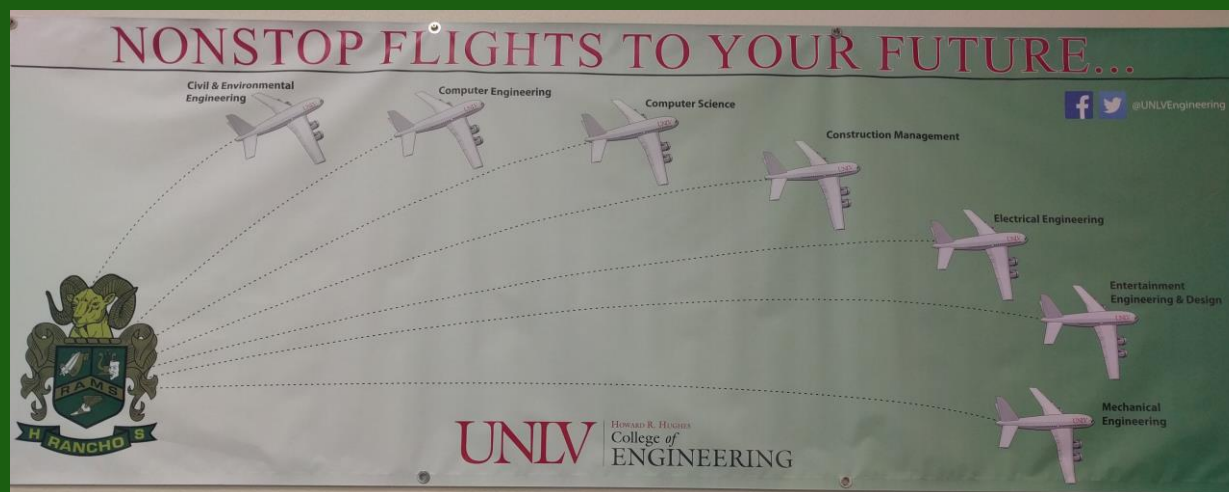


- Professional development for teachers
- Adjunct Professor status with ERAU
- Dual enrollment offered for students
- 24 college credits offered including advanced math and science classes
- Cost per class is determined by local community college rates
- Average cost is ~\$260/3 credit course
- Other unique opportunities for students

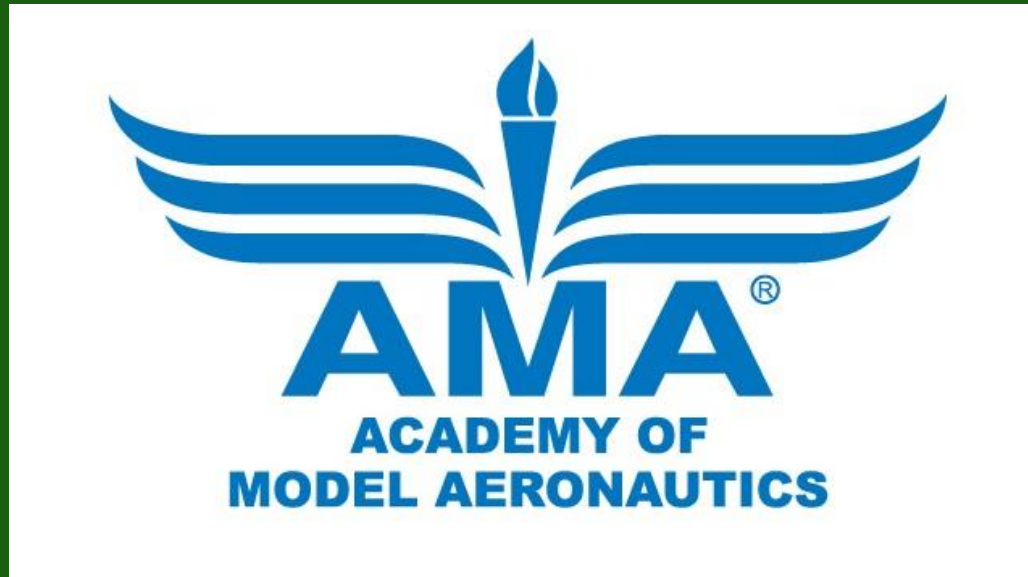
Educational Partnerships



- Lab tours through mechanical engineering department
- Senior Design Day
- Mentorship w/UNLV chapter of American Institute of Aeronautics and Astronautics (AIAA)
- Developing internship design project program



Educational Partnerships



- AMA Charter School
- Campus is designated UAS airspace in Las Vegas
- Insurance coverage for both staff and students

Corporate Partnerships

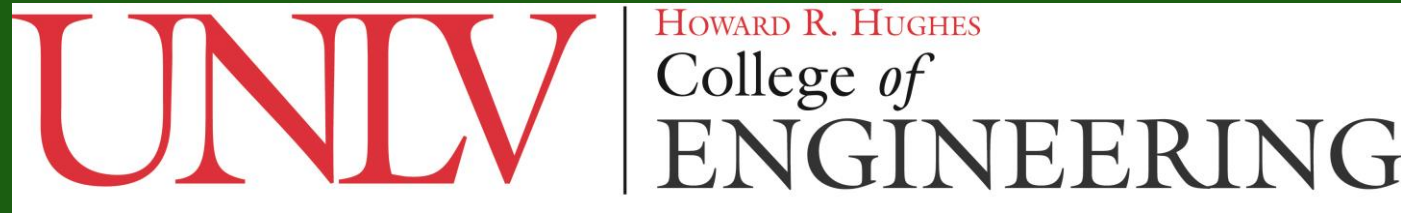
- Pilot Program



- Pathway for FAA testing
- In flight training and management of flight hours
- \$2,000 discount in conjunction with CCSD

Corporate Partnerships

- Internship Offers



Corporate Partnerships

- Job Shadow and Tours
 - Allegiant Air
 - Dronesmith Technologies
 - Aviation Institute of Maintenance
 - UNLV



CCSD Partnerships

- Hydroponics project with Walter Bracken STEAM Academy
 - First graders visit Rancho High School



Contact Information

- Website
 - <http://ranchorams.org/>
- Twitter
 - @RanchoRamsLV @RHSmagnet
- Facebook
 - <https://www.facebook.com/ranchohighschool>
- E-mail
 - sjquintana@interact.ccsd.net

**Thank you for your interest in
Rancho High School,
Home of the Rams!**



Questions for our Panelists?



Andrea Zimmermann

- State Policy Associate; Moderator
- Advance CTE



Nicole Martin

- Senior Program Manager
- International Trade Education Programs (ITEP)



Mike Shallenberger

- Engineering Teacher
- STEM School and Academy in Colorado



Sara Quintana

- Aerospace Engineering and Robotics Teacher
- Rancho High School Aviation Magnet Academy

Thank you!



February 24, 2016



Southwest Transportation Workforce Center
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THE TRANSPORTATION WORKFORCE
CONNECTING AND EMPOWERING