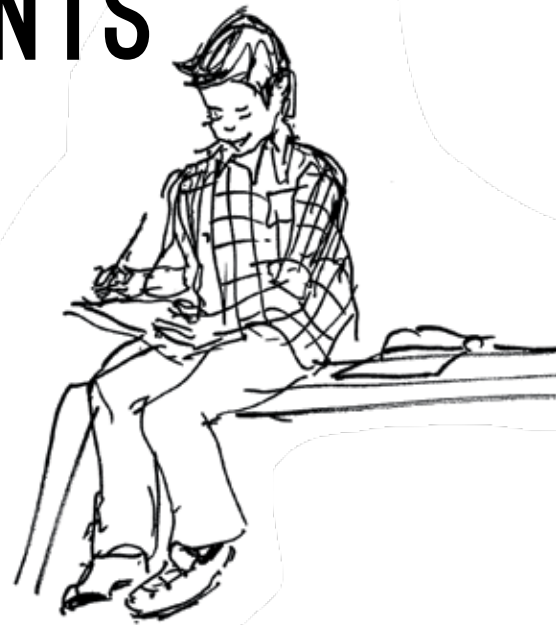


HOW OFTEN DO STUDENTS HAVE A VOICE...

...in advocating for STEM in THEIR schools?

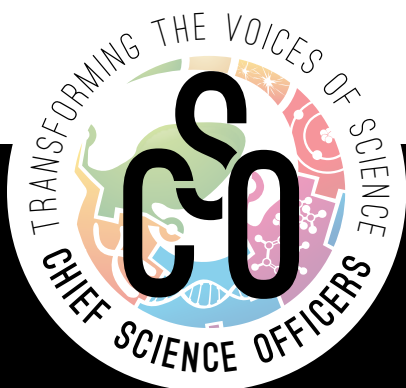


...in making STEM connections in THEIR communities?

...in planning the jobs of THEIR future?



Artwork drawn by John Drury of Drury Design Arts, documenting the 1st Annual CSO Summer Institute 2015



The time is now! Join U.S.A.'s First
CHIEF SCIENCE OFFICERS

www.chiefscienceofficers.org



CHIEF SCIENCE OFFICERS

A Student-led Intervention to Increase Interest in STEM

This realization that kids need a voice sparked a powerful idea to put students at the center of STEM advocacy, student experience and community action. The landscape for STEM education could be a lot different—and arguably far more productive—with a few simple actions that embrace student leaders as voices for STEM.

THE CONCEPT:

Students in Arizona’s middle and high schools **ELECT** their peers to be their Chief Science Officer(s) who are empowered to influence a wide range of STEM opportunities in their schools and the community.

ON CAMPUS CSOS,

- Build the overall **appeal and “buzz”** of the school’s STEM opportunities (p. 8-9).
- Serve as the **“STEM voice”** in supporting programming such as speakers, field trips and science nights. They ensure the opportunities reflect the interests of their peers (p. 8-9).
- **Engage the student body** in conversations about STEM and the workforce (p. 8-9).
- Serve as their **schools’ point person** for external experts and organizations (p. 8-9).

OFF CAMPUS CSOS,

- **Participate in local and state conversations** on STEM, education and workforce such as panels, discussions, talks, workshops and blogs (p. 10-11).
- Comprise a **statewide “cabinet”** and engage in civic action projects with their peers (p. 12-15).

CSOS SUCCEED THROUGH A NETWORK OF SUPPORTS

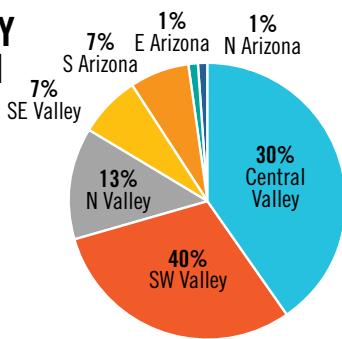
- CSOs are **elected by their peers** ensuring campus awareness, importance and support of the position (p. 18).
- CSOs attend a **training institute** learning key leadership and employability skills such as communication, networking and use of technology skills (p. 6-7).
- Schools identify a **point of contact** to monitor student performance and maintain communication with the program team (p. 18-19).
- The **CSO program team** maintains connections with students year-round in person and online.
- CSOs are matched with **“SciTech Jedi”** community mentors who bring real world expertise and support (p. 16-17).
- CSOs work as a **community of practice** year round sharing experiences and lessons learned (p. 12-13).

WHO IS A CHIEF SCIENCE OFFICER?

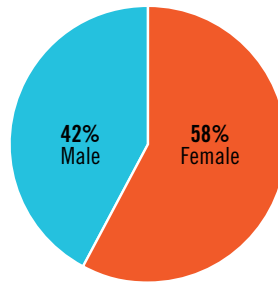
- 6th to 12th grade student
- Elected by their peers
- Demonstrates interest in science, technology and innovation
- Has a desire to impact their community
- Actively participates in a CSO training institute and year round activities

The class of 2015-16 included **78 schools** throughout Arizona electing **138 total Chief Science Officers** or “CSOs.”

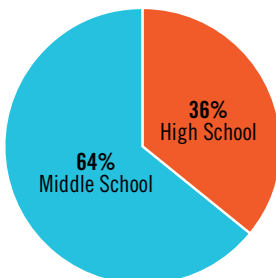
CSOs BY REGION



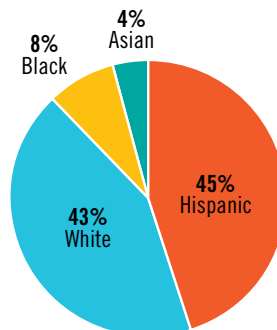
CSOs BY GENDER



CSOs BY EDUCATION LEVEL



CSOs BY ETHNICITY



How do we transform Arizona STEM culture?



Joshua
Bioscience High School

“I hope to bring the science community closer to the students at my school.”



Sierra
Northpoint Expeditionary Learning Academy

“Science is cool and exciting, and it’s certainly proof that magic exists.”



Marie
Michael Anderson School

“Inspire children to take up careers in STEM”



Jonathan
Metro Tech High School

“Show everyone that STEM is fun and a promising field of work to pursue.”



2016-2017 YEAR AT A GLANCE

The 2016-17 CSO season begins when a student wins their school's CSO election and successfully completes the training institute. **QUARTERLY**, CSOs engage in at least one community event or an "all-call" statewide cabinet meeting. **MONTHLY**, CSOs meet with school staff and SciTech Jedi mentors. **WEEKLY**, students interact online with their fellow CSOs.

IMPORTANT CSO PROGRAM DATES 2016-2017

SPRING 2016 – School CSO elections

APRIL – School Memorandum of Agreement due

MAY 3 – New CSOs recognized at 2015-16 graduation celebration

JUNE – Parent/Student MOA due

JULY 18-21 – Summer Institute

AUG – School activity fee due

AUG-DEC 2016 – CSOs introduce action plan with their school

SEPT – Fall Institute

OCT – Statewide Cabinet Meeting - Civic Action in STEM at the Arizona State Capitol

DEC – Winter Celebration Event

JAN-MAY 2017 – CSOs continue to implement action plan with their school

JAN 28 – Arizona SciTech Festival Kickoff Celebration (at UA Downtown Phoenix)

FEB 28 – Statewide Cabinet Meeting at the Honeywell Aerospace Airplane Hangar

FEB-MAR – Participate in Arizona SciTech Festival events

SPRING – School CSO elections (2017-2018 cohort)

MAY – Statewide cabinet meeting and graduation celebration

GOALS

THE OVERARCHING PROGRAM GOALS ARE TO:

- Cultivate the pipeline of **diverse STEM leaders**
- Enrich middle and high school **STEM culture and career awareness**
- Increase **student “voice” in STEM conversations** at schools and in the community
- Enhance the **workforce and employability skills of secondary student CSOs**
- Increase the **engagement of STEM professionals** and community partners with STEM education
- Build a **nationally recognized cabinet** of student CSOs in schools across America

CSO STUDENT GOALS:

- **Inspire their peers** and community about STEM and future STEM careers
- **Build meaningful relationships** with community partners for their school
- **Ensure student voice** is part of their community’s discussion in STEM and workforce
- **Address state-level challenges** in STEM by working through the CSO cabinet
- **Innovate** what it means to be a Chief Science Officer

COMMUNITY PARTNER GOALS:

- Position CSOs as an **esteemed stakeholder in the community** by involving them in key conversations about STEM and the workforce
- Build the overall **brand and awareness of CSOs** in the community by communicating the importance of the program to peers
- Ensure all CSOs connect with **“SciTech Jedi”** community mentors

SCHOOL PARTNER GOALS:

- Embrace the CSO role as an important component of **school structure and culture**
- Increase **STEM opportunities** for their community
- Utilize CSO positions to **link feeder schools**



*CSO Julie
MC Cash
Elementary*

“I want to get my whole school interested in science so they can learn more about what’s going on in the world.”



*Russ
SciTech Jedi Mentor
Pinnacle Transplant*

“By participating in the CSO program, we have enabled our associates to reach out to the community and help students understand the work that we do while exposing them to a great future career in biosciences.”



*Principal
Pietrangeli
Kenilworth
Elementary*

“The support from our 2 CSO’s helped us to build a STEAM identity at Kenilworth. They are my go-to people when planning our STEAM events and classroom programming.”



CSO TRAINING INSTITUTE

Why is Training Required

Elected students convene at the training institute and work to build their skills as student STEM leaders.

The Training Institute is one of the most important experiences for newly elected students. CSOs will form lifelong bonds with like-minded students, define their STEM passions and make plans for the upcoming year. Sessions led by knowledgeable business executives and community leaders provide CSOs interactive, hands-on learning opportunities geared to practice workplace skills in communication, leadership, strategic planning and more. Students have the opportunity to directly interface with the community and business STEM leaders (SciTech Jedi, pg 16) who help to lead institute sessions and serve as mentors.

GOALS FOR CSOs AT THE INSTITUTE:

1. Understand roles and responsibilities
2. Begin working as a 'community of practice' with their fellow CSOs
3. Bolster their workplace employability skillset
4. Build connections with community and business leaders
5. Develop an action plan for the upcoming year

INSTITUTE SESSIONS

(organization lead)

- **TEAM BUILDING ACTIVITIES** – experience STEM-focused challenges and build friendships and trust with their peers (*University of Advancing Technology [UAT], Tonto Creek Camp*)
- **STEM EXPLORATIONS & SHOWCASE** – develop and execute an engaging STEM demonstration (*Science is Fun*)
- **VISION STATEMENTS** – develop a vision statement and personal “elevator pitch”
- **STEM INNOVATIONS** – experience hands-on opportunities with new technologies like coding, 3D printing, robotics and more. (*Phoenix Analysis & Design Technologies, Drury Design, UAT, State Farm, PerfOpt*)
- **NETWORKING 101** – practice communication skills and an “elevator pitch” with fellow CSOs (*State Farm, UAT*)

- **PUBLIC RELATIONS** – learn ‘what to say, how to say it and why’ when working with the media (*Orbital ATK, State Farm*)
- **VIDEO PROFILE** – practice PR skills and “elevator pitch” on video (*UAT*)
- **BLOG WRITING** – express STEM passions in words (*Intel, TGen, Arizona State University, City of Scottsdale*)
- **ACTION PLANS** – begin to plan activities and opportunities for the upcoming year
- **INTRO TO CANVAS SOFTWARE** – learn how to communicate online with program team and peers during the year (*OnTop Technologies*)
- **CABINET MEETINGS** – strategize with fellow CSOs and Jedi mentors about collective action opportunities (*Intel, Maricopa County Community Colleges, Local First, Castelazo Content, Flinn Foundation*)
- **ONE-ON-ONE MENTORSHIP** – SciTech Jedi are available as mentors throughout the institute (*Freeport McMoRan, State Farm, Honeywell, Intel, Flying Over Time*)

“ As a State Farm Jedi Mentor, I was impressed with the training the students received in speaking, writing blogs, networking and more. Many students shared this was the first time they were surrounded by people like themselves. It allowed them to open up and build connections with other students. The CSO program is a rare opportunity for students and industry to interact! ”

Leann Steidinger
State Farm



Networking 101



Video profiles



Strategic planning



Team building

Leadership team headed by CSOs
Dominique and Moises run the 2016
Casa Grande SciTech Festival.



CSOs IMPACT THEIR SCHOOLS

Chief Science Officers are empowered as STEM leaders to bridge opportunities with their schools and cultivate their love for all things STEM.

Chief Science Officers play a key role in school STEM programming. They serve as the “STEM voice” for their student body, supporting opportunities such as speakers, workshops, clubs, field trips and science nights. They ensure such experiences reflect interests of their peers, promote opportunities campus wide, impacting hundreds of their peers with STEM. Finally, the CSO position serves as a designated point of contact for external organizations to connect STEM opportunities with schools.

EXAMPLES OF CSO STEM PROGRAMMING IN SCHOOLS:

- **Casa Grande HS** CSOs Dominique and Moises organized their district-wide SciTech Festival event reaching **3000+ students** in Casa Grande.
- **Hamilton HS** CSOs Dhruv, Paige and Somil created a STEM Leadership Council bringing together all STEM clubs and published a combined newsletter impacting **2500+ students**.
- **Pendergast District CSO Council** regularly updated STEM happenings at their school board meetings.
- In partnership with their Intel SciTech Jedi Mentor, **Metro Tech's** CSOs Juan and John organized a first of its kind STEAM spirit week reaching **~500 students** over the week.
- **Avondale District** CSOs organized a field trip for their peers to visit PerfOpt Technologies and experience 3D Immersion Technologies.
- **Sierra Verde STEM Academy** CSOs Leah, Summer and Elisha kept **1000+ students** informed of all things STEM on their school's daily announcements.
- **Kenilworth** CSOs Jaymee and Reagan presented at their school's 95th Year Community Celebration in front of **300+ students and parents**.

2015-2016 PARTICIPATION

78 schools from 27 districts District Name (# of schools)

NORTH VALLEY

- Cave Creek Unified School District (3)
- Deer Valley Unified School District (1)
- Imagine Prep Surprise (1)
- Nadaburg Unified School District (1)
- Paradise Valley Unified School District (1)
- Pardes Jewish Day School (1)
- Peoria Unified School District (2)
- Rancho Solano Preparatory School (1)
- Sonoran Science Academy Peoria (1)

SOUTHEAST VALLEY

- Chandler Unified School District (3)
- Mesa Public Schools (1)

SOUTHWEST VALLEY

- Agua Fria High School District (3)
- Avondale Elementary School District (7)
- Buckeye Elementary School District (5)
- Liberty Elementary School District (1)
- Littleton Elementary School District (3)
- Pendergast Elementary School District (10)
- Tolleson Elementary School District (4)
- Trivium Preparatory Academy (1)

CENTRAL VALLEY

- Laveen Elementary School District (7)
- Phoenix Elementary School District (2)
- Phoenix Union High School District (7)
- Roosevelt School District (1)
- SySTEM Phoenix (1)
- Western School of Science and Technology (1)

SOUTHERN ARIZONA

- Casa Grande Elementary School District (1)
- Casa Grande High School District (1)
- Coolidge Unified School District (1)
- Florence Unified School District (1)
- Leading Edge Academy (1)
- Maricopa Unified School District (1)
- Sonoran Science Academy Broadway (1)
- Sonoran Science Academy Tucson (1)

NORTHERN ARIZONA

- Northpoint Expeditionary Learning Academy (1)
- Sequoia Village School (1)



CSO *Nikolas*
Maricopa High

“I hope to integrate as many STEM programs as I can into my school and community, and hopefully inspire a scientific spark in some of my peers.”



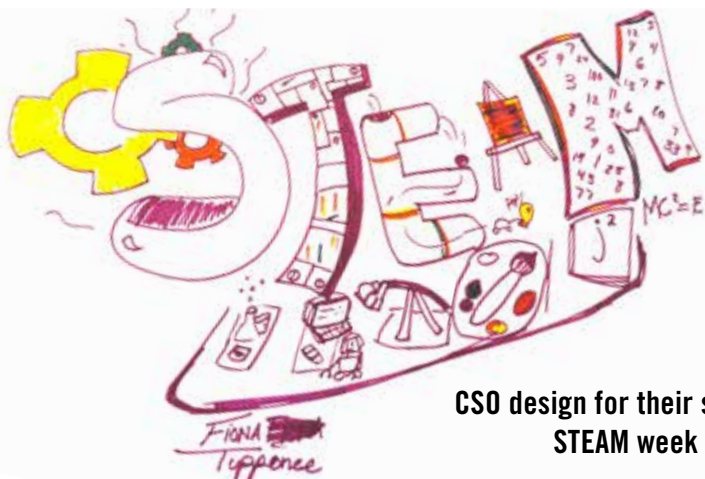
CSO *Eliseo*
PH Gonzalez

“I believe as a CSO I can make an impact in the science culture in my school.”

(re: Metro Tech STEAM week)

“ It was great to see these guys like rock stars- they really did a great job. ”

Ash Intel



CSO design for their school STEAM week event.



Chandler CSOs hold a panel then experience a full behind the scenes tour at Orbital ATK.



CSO VOICE IN THE COMMUNITY

Chief Science Officers serve as their school's STEM ambassador in community conversations about STEM education and workforce.

CSOs advocate for STEM opportunities with city councils, school boards and chambers of commerce, at conferences and roundtable discussions, and in community blogs and other media.

Given the rarity for students to be heard in the community, adults are often blown away with the mature and fresh perspective CSOs bring to important issues around funding, teaching and school STEM climate. Each of these real-world, career-oriented experiences provides students opportunities to observe business norms, practice their communication skills and develop their own opinions on how to impact the workplace as future STEM leaders. As CSOs continue to participate in these discussions, word will spread about the value and importance of including youth voice in these conversations resulting in additional opportunities.

EXAMPLES OF 2015-16 COMMUNITY ENGAGEMENT:

- 16 CSOs spearheaded a **community roundtable discussion** about strategies to better engage students in STEM at the **Arizona Commerce Authority's Innovation Arizona Summit**.
- 10 Avondale CSOs performed STEM explorations at the **Avondale/Goodyear Tale of 2 Cities** event.
- 7 Avondale and Phoenix Union CSOs from presented their viewpoints of **workforce and education** at a funders discussion spearheaded by the national **Change the Equation** and **100K in 10** initiatives.
- 5 CSOs from Maricopa and Basha High shared their opinions on the **importance of mentors and internships** at the **East Valley Tech Alliance** at Intel.

“ It was very exciting to hear from these amazing young people -they are **PASSIONATE** about what they’re doing! ”

John Barta, Orbital ATK VP

- 5 Chandler area CSOs presented the **importance of a STEM education** for the **Orbital ATK Stellar Speaker Series** to 3 dozen employees.
- 5 CSOs from Kenilworth, SySTEM and C.O. Greenfield presented **what it means to be a CSO** as a student panel to teachers at the **21st Century STEM Conference**.
- 4 CSOs from Michael Anderson, Centerra Mirage and Bioscience High School presented **what it’s like to be a CSO** to senior executives at **State Farm National Conference**.

PANELS

- ASU’s Educators Rising
- AZ Stem Teachers Conference - 21st Century STEM
- Change the Equation Funders Discussion
- East Valley Tech Alliance at Intel
- Health Science Engineering and Technology Fair at GCU
- Maricopa Community Colleges STEMulating the Minds of Our Future
- Orbital ATK’s “Lunch and Learn” series
- Science Foundation Arizona’s Stem Clubs Conference
- State Farm National Conference
- STEMulating the Minds of Our Future- Gateway Community College

PERSONAL TOURS

- Arizona State University
- Honeywell Aerospace Airplane Hangar
- Orbital ATK
- PerfOpt Technologies
- State Farm
- University of Advancing Technologies

PRESENTATIONS

- 2015 Innovation Arizona Summit
- Avondale and Pendergast District Board Meetings
- AZ Technology Council Board Meeting
- Maricopa County Superintendent’s Quarterly Meeting
- Phoenix Corporate Volunteer Council
- Dozens of school staff meetings

COMMUNITY EVENTS PARTICIPATION

- Avondale/Goodyear Tale of 2 Cities
- Axosoft’s It was Never a Dress Conference
- AZ SciTech Year End Celebration at SRP
- Chandler’s Science Spectacular
- Chandler STEM Festival
- Girls in STEM at AZ Science Center

IN THE MEDIA

- Arizona Commerce Authority Newsletter
- Arizona Governor’s Education Blog
- Arizona Parenting Magazine
- Arizona SciTech Festival Newsletter
- Arizona’s Voice Magazine
- Phoenix Business Journal



CSO Brendan at the Change the Equation funders discussion.

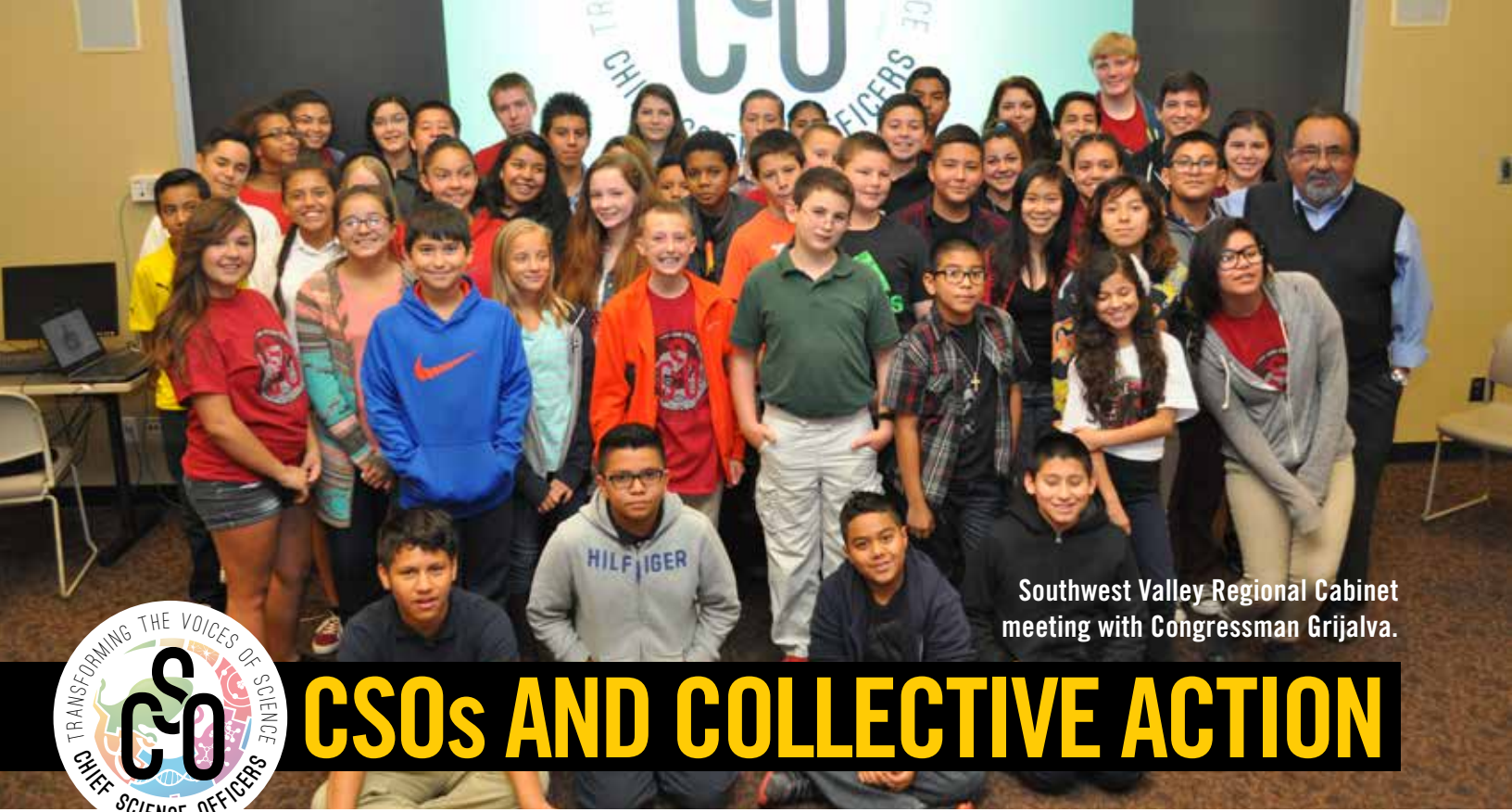


CSO Iris performing STEM explorations at the Tale of 2 Cities in Avondale/Goodyear.



CSO Ruchi
Basha High School

“I am grateful for the opportunity to talk to local business leaders from various companies across Arizona.”



Southwest Valley Regional Cabinet meeting with Congressman Grijalva.



CSOs AND COLLECTIVE ACTION

Chief Science Officers collaborate to amplify their voice as a collective cabinet.

Working together, CSOs open doors. This can take shape in meetings with city, state and federal leadership, presentations at high profile conferences and tours of high tech facilities.

Collectively, the 138 CSOs represent ~40,000 students statewide, a powerful number when it comes to student voice. Throughout the year, CSOs work as a community of practice on collaborative projects, share lessons learned and regularly connect online through Canvas, a learning management system.

THE FOLLOWING PROJECTS REFLECT THE BROAD RANGE OF COLLABORATION AMONG CSOS IN 2015-16:

- 110 CSOs worked with **Dawn Wallace, Governor Ducey's Education Policy Advisor**, on **civic action** opportunities at the Honey Aerospace Airplane Hangar (p. 14-15).
- 55 Southwest Valley CSOs teamed with **U.S. Congressman Grijalva** to produce a student authored brief about **barriers and proposed solutions** to STEM careers.
- 20 CSOs are working to develop a **YouTube Channel** showcasing concepts of STEM in their communities.
- 16 CSOs in Pendergast District meet monthly to work on school STEM events and plan for **presentations at district board meetings**.
- 12 North Valley CSOs worked with **State Representative Heather Carter** on **educational issues** that impede students from entering Arizona's STEM workforce.
- 6 CSOs will represent their cabinet in **Washington DC meetings with members of Congress and the Office of Science and Technology for the President**.

CSOS IDENTIFY BARRIERS & SOLUTIONS

to STEM Careers with US Congressman Grijalva. The CSO brief is now being shared with members of Congress. Highlights of this discussion are listed in order of importance to students.

COST OF EDUCATION - College is Expensive!

- Apply for scholarships, grants and loans
- Ask teachers for help
- Get a job
- Go to community college

FAMILY ISSUES - Culture, Religion, Pregnancy, Bad Addictions, Lack of Support

- Get important people involved
- Seek professional help
- Take online classes

ROLE MODELS & AWARENESS - No Inspiration, Not enough jobs locally so why bother

- Be a role model - encourage younger kids
- More guest speakers in school
- Do research - get curious
- Get a mentor

INTROSPECTION-SELF EFFICACY - Social Anxiety, Lack of Motivation, Peer Pressure, Bullying, English Language and Learning Disabilities

- Prove others wrong and do “big” things
- Stay away from bad influences
- Pay attention during class; be curious
- Include yourself during discussion
- Develop self-determination
- Create/Join STEM clubs
- Try online school
- Learn English
- Educators develop more approachable ways to teach

LACK OF RELEVANT WORK EXPERIENCE

- Internships
- Shadowing people in a field of interest



CSO *Jesseca*
Chandler Early College

“We Are Stronger TOGETHER than Alone.”



CSO *Kane*
Desert Mirage School

“Meeting Congressman Grijalva was a great opportunity for us to not only meet someone who legitimately cares about students, but for us to be able to tell him what we need and want out of our curriculum.”

“CSOs helped to educate me by sharing their thoughts on STEM education and workforce barriers. I took this information back to Washington and am honored to help make student voice become part of the policy making process.”

Congressman Grijalva

“I enjoyed meeting the Congressman and seeing the other CSOs. I had the opportunity to talk about many subjects with my fellow CSOs. Mr. Grijalva politely listened and shared a few solutions and problems.”

CSO Ashley, Westwind





STATEWIDE CABINET MEETING



Students experienced the “Honeywell Hour” learning all about Honeywell Aerospace Innovations.

Chief Science Officers meet as a statewide cabinet to collaboratively address issues related to civic action and STEM education.

The first ever Chief Science Officer statewide cabinet convened 110 CSOs, 20 SciTech Jedi and 40 educators at the **Honeywell Aerospace Airplane Hangar** in Deer Valley.

The second half of the day was dedicated to Honeywell Aerospace technology. The session kicked off with **Bob Witwer, Honeywell Aerospace VP of Advanced Technology** providing an inspiring speech about “science as the new cool”. Students then rotated in groups through 8 stations staffed with over dozen Honeywell pilots and engineers including:

- **Jet Engines** – see and understand the power behind the plane
- **Auxiliary Power Unit** – learn what keeps the aircraft going in the event of a power failure
- **Satellite Communications** – staying in touch with our aircraft around the world
- **Virtual Reality** – demonstration of Honeywell’s technology through Samsung Gear VR
- **Cockpit Simulation** – using advanced technology to showcase avionics parts and performance
- **The Person Behind the Aircraft** – talk to a Pilot & see a Cessna Citation 500 business jet up close and personal

The session convened with **Barbara Brockett, Honeywell Aerospace VP of Engineering Test Services** discussing how chart a path toward a successful future in a STEM career.



Honeywell
Hometown Solutions

CSOS DISCUSS CIVIC ACTION & STEM

in a town hall discussion led by **Dawn Wallace, Governor Ducey's Education Policy Advisor**. CSOs brainstormed topics they are most passionate about and strategies they would use to communicate and advocate for them.

STEM EDUCATION NOT PRIORITIZED AND ACCESSIBLE

- Increase funding for STEM
- Advocate the importance for STEM
- Expand extracurricular STEM opportunities
- Get parents and the community involved
- Encourage team activities
- Entertain with STEM
- Diversify classes
- Identify financial support for students with disadvantages
- Elect and retain CSOs

TEACHER SHORTAGE

- Retain teachers who enjoy learning
- Raise teacher salary
- Reward passionate teachers

LEARNING ENVIRONMENT & INSTRUCTION

- More hands-on and visual learning
- Smaller class size, more peer learning
- Emphasize creativity
- Increase classroom support
- Reduce testing
- Start school later

LACK OF TECHNOLOGY, EXPERIENCE AND STUDENT MISUSE

- Fundraise for technology
- Make a better case how technology supports student learning
- Find affordable options
- Build upon what schools already have
- Free Wi-Fi
- Expose kids at young ages to technology
- CSOs talk to peers about appropriate technology use

CAREER TRANSITION

- Increase STEM electives like coding
- Increase dual-enrolled classes
- Include life skills in math classes
- Encourage field trips and real-world experiences
- Connect subjects to real-world
- More exposure to career opportunities
- Highlight female STEM professionals
- Increase school to business partnerships



CSO *Cody*
Cactus High School

“This was a great opportunity to discuss some of the issues regarding STEM in schools. I learned that people in charge of education actually do care about making it effective.”

“The CSO program is an innovative, Arizona grown model that we anticipate will transform the STEM climate. We are proud to be leading the path in producing the nation’s diverse civic STEM leaders.”

Doug Ducey Governor





CSO CONNECTION WITH THE WORKFORCE

Throughout the year, CSOs practice teamwork, work ethic, critical thinking, problem solving, verbal and written communications, and technology and work to apply their knowledge in real world settings.

These skills are emphasized as important for employment by both the Arizona Department of Education and the Association of American Colleges and Universities.

Business leaders volunteer their time to teach sessions in communications, networking, strategic planning, team building and STEM innovations. Students use technology to develop their online profiles, write blogs, create videos and communicate with each other online via the Canvas learning management system. Year round events are held at innovative businesses and college settings to connect CSOs with career professionals and allow them to experience real-world business norms. In addition, CSOs engage in at least one community opportunity to practice their leadership and communication skills.

STEM PROFESSIONALS SHARE THESE DIVERSE EXPERIENCES WITH CSOs

- **Orbital ATK's PR Specialist Trina Helquist** shares her experience on **professionalism** with CSO regional teams.
- **State Farm's Grass Roots Communication lead Gus Miranda** coaches CSOs on **business norms** in a "Networking 101" session.
- **PerfOpt Technologies' CEO Raman Khurana** introduces CSOs to **immersive technologies** at their 3D design lab in Avondale.
- **Phoenix Analysis and Design Technologies Engineers** work with CSOs on designing a **3D badge** for all CSOs.

“ This is a great program to expose students to STEM career opportunities in their communities while encouraging them to take advantage of local workforce needs. ”

SciTech Jedi
Angie Harmon, Freeport McMoRan



- **Pinnacle Transplant’s CEO Russ Yelton** educates North Valley CSOs about innovations in transplant science and **skills needed** to enter this field.
- **Intel’s Renee Levin** shares **perspective on STEM and education** during a statewide cabinet meeting.
- **Honeywell Engineers** showcase **innovations** in jet engines, virtual reality, satellites and more at the Honeywell Aerospace Airplane Hangar.
- **Castelazo Content’s Molly Castelazo** introduces CSOs to **gender equity** in the workplace in a strategic planning session.
- Members of the **State Farm IT team** introduce **coding** by making a PB&J sandwich.



CSO Dhruv
 Hamilton
 High School

“The global economy is steadily become more science and technology oriented. Students should look into careers in STEM to best prepare themselves for the new global job market.”



CSO Calvin
 Sequoia Village
 School

“I am hoping to allow my peers at school to have opportunities in the tech and science fields as well as grow my own career.”

The Power of the “SCITECH JEDI”

CSOs work with “SciTech Jedi” or community mentors who bring real world expertise and support. During the 2016-17 season, 50+ SciTech Jedi supported the training institutes, hosted events at their organizations and partnered with CSO at their schools. The SciTech Jedi reflect professions ranging in Aerospace, Biomedical, Communications specialists, Computer programming, Electronics engineering, Legislators, manufacturing, Pilots, Manufacturing, Robotics and represent the following organizations:

- Arizona Central Credit Union
- Arizona State University
- Castelazo Content
- Cox Communications
- Drury Design
- Flying Overtime
- Flinn Foundation
- Freeport McMoRan
- Grand Canyon University
- Honeywell
- Intel
- Local First
- Maricopa Community College
- Orbital ATK
- PADT Inc.
- PerfOpt
- Pinnacle Transplant Technologies
- SRP
- State Farm
- TGen
- University of Advancing Technology

North Valley Regional Cabinet meeting hosted by State Representative Heather Carter.



SCHOOLS - HOW TO JOIN

1-CSOS ARE ELECTED, NOT APPOINTED.

Holding a general election ensures the CSOs represent their student body, builds awareness of the position, validates the importance of STEM to the school community and ultimately empowers the elected student to succeed in their role as CSO. Election format varies by site. Some schools integrate their elections with student council while others hold stand-alone CSO elections.

Best Practices

- The more visible the better
- Elect multiple CSOs to work as a team
- Contact us for ideas on how to hold your school's election.

2- POSITION YOUR CSOS AS A STEM CULTURE CATALYST.

The CSO position can be as powerful as you make it. Include your CSOs in staff and PTO meetings, update your school board and include them when STEM collaborators visit campus. Challenge them to be creative and ignite new STEM opportunities from the student's viewpoint.

Best Practices

- Embrace CSOs as a core component of your school's STEM culture
- Provide leadership opportunities for CSOs during school events (open house, rush, STEM events)
- Identify a reliable point of contact for the student
- Allocate time for your CSOs to meet regularly with other CSOs in your district
- Support CSO field trips with transportation and chaperones if needed

3- FINANCIALLY CONTRIBUTE AN ACTIVITIES FEE.

Schools will be invoiced in June 2016 for a reduced cost of \$400/student (made possible by area sponsors). The unsubsidized cost is \$1000/student. Many schools have leveraged state tax credit dollars to support their CSOs.

4 -SIGN THE ONLINE AGREEMENT THAT AFFIRMS THE ABOVE COMMITMENTS.

See www.chiefscienceofficers.org or contact us.

“ Since we started the CSO Program at Ironwood High School, our students have been more engaged and excited about what’s happening in the STEM world. You can see the school culture changing when the kids mention the STEM Club and the CSOs. ” *Mark Adams* CSO Point of Contact Teacher

EXPANSIVE SUPPORT SYSTEMS Ensure Success

It takes a community to ensure CSOs reach their full potential. School administration, the CSO program team, teachers, parents and business leaders have the unique opportunity to join forces in support of these exceptional students.

POINT OF CONTACT ROLE

- Facilitate communication among the program team, your CSOs, their parents, SciTech Jedi and your school
- Be available. Listen to their ideas, help them problem solve and support their events concepts
- Ensure the CSOs stay on track with program calendar
- Ensure CSOs attend community events with school release forms and transportation

CSO ROLE

- Complete the CSO training institute
- Participate weekly in the online Canvas class
- Plan and implement at least one STEM project or event at their school
- Participate in community conversations about STEM education and workforce
- Attend statewide and regional cabinet meetings
- Engage in collective action projects with the CSO cabinet
- Be a respected student leader

PARENT ROLE

- Support your student at home: listen to their ideas, help them problem solve and grow
- Student to engage in technology and on the learning management system
- Provide transportation and chaperone (as needed) to attend field trips

CSO PROGRAMMING LEADERSHIP TEAM ROLE

- Plan and implement the training institutes
- Provide guidance and support for CSOs on and off site
- Co-develop collaborative CSO opportunities
- Support state wide cabinet meetings
- Open doors for CSOs to engage in the community
- Facilitate the classroom canvas site
- Help CSOs build self-esteem, leadership, workforce and employability skills



CSO *Leah*
Sierra Verde
STEM Academy

“This program taught me new skills and has allowed me to exceed my goals and build the confidence I need to thrive in the future”



CSO *Emonie*
Leading Edge

“As a CSO, I want to learn as much as I can and find out new ideas for my school’s science program.”

Centerra Mirage
CSO Mom

“Our family values the CSO program as it is an important enhancement to our son’s education. It has helped him to meet like minded friends while creating an outlet for his STEM ideas and inventions.”

CONTACT:

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or **480 785 5335**



CSOs
138

SCHOOLS
78

STUDENTS DIRECTLY
IMPACTED BY CSOS
~3,500

~1,000 HOURS OF EDUCATION
ADMINISTERED TO CSOs



CSO AUTHORED BLOGS
250+



41 SCHOOL
BASED
EVENTS



COMMUNITY
EVENTS
33



HOURS OF
COMMUNITY
MENTOR
ENGAGEMENT
500+

SCITECH JEDI
MENTORS
50+

~20K STUDENTS
INDIRECTLY
IMPACTED
BY CSOS

STUDENTS REPRESENTED
BY CSOs
~40K



ADULTS DIRECTLY
IMPACTED BY CSOs
500+



NEWS,
STORIES, MEDIA
HIGHLIGHTS
15+



ARIZONA SCITECH
SIGNATURE
program

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