ARIZONA SCITECH® festival

6th Annual Arizona SciTech Kickoff Conference
FUTURE STEM PATHWAYS

September 15, 2016
**Scottsdale Center for the Performing Arts
& Scottsdale Civic Center Library**

CO+HOOTS

ARIZONA TECHNOLOGY COUNCIL FOUNDATION

Chicanos Por La Causa, Inc.

ARIZONA COMMERCE AUTHORITY

CITY OF SCOTTSDALE

STEM AZ Education Collaborative

CYBER SECURITY CANYON

CONFERENCE
SCHEDULE

7:45 - 9:00:   **Registration and Networking Breakfast**
Dayton Fowler Grafman Atrium

9:00 – 10:00: **AZ SciTech Kickoff and Keynote**
Virginia G. Piper Theater

10:15 – 12:00: **Morning Sessions**
Scottsdale Center for the Performing Arts,
Scottsdale Museum of Contemporary Art,
Civic Center Library

12:00 – 1:15:   **Lunch (On Your Own) and/or
Lunchtime Sessions**
Scottsdale Center for the Performing Arts,
Scottsdale Museum of Contemporary Art,
Civic Center Library

1:15 – 4:00:   **Afternoon Sessions**
Scottsdale Center for the Performing Arts,
Scottsdale Museum of Contemporary Art,
Civic Center Library

CONFERENCE SPONSORS

PLATINUM

SILVER

KEYNOTE
Parallel Perspectives:
Viewing Earth from Space and Discovering Space on Earth

JANE POYNTER is co-founder and Chief Executive Officer of Arizona-based World View Enterprises, a company pioneering discovery at the edge of space through the use of high-altitude balloons. Poynter will expound on World View's goal to provide the "orbital perspective," and will explain how viewing Earth from space changes people's lives for the better back on the ground.

Ms. Poynter is a member of the Biosphere 2 design team and a member of the original crew who lived inside the sealed, self-sustaining habitat for two years. She was co-founder, President and Chairwoman of Paragon Space Development Corporation, which develops technologies for extreme environments. Experiments in her patented, self-sustaining habitats have flown on the International Space Station (ISS), Mir and the Space Shuttle.

GEOFF NOTKIN is President of Arizona-based Aerolite Meteorites, Inc. and a world-renowned meteorite hunter and expert. Notkin will discuss his lifelong fascination with meteorites and how the discovery and study of space rocks contribute to our constantly- evolving perspective of life on Earth and the origins of our solar system.

The media has described Geoff as one of the "rock stars of science." He hosts Science Channel's award-winning adventure series, "Meteorite Men" and the two-time Emmy Award-winning educational TV series, "STEM Journals." Notkin is an internationally-recognized authority on meteorites, an award-winning author and photographer, a television and film producer, a world traveler, and an adventurer. His commercial meteorite company, Aerolite Meteorites, Inc., is a global leader in space rock recovery and research. Notkin serves on the Board of Governors of the National Space Society.
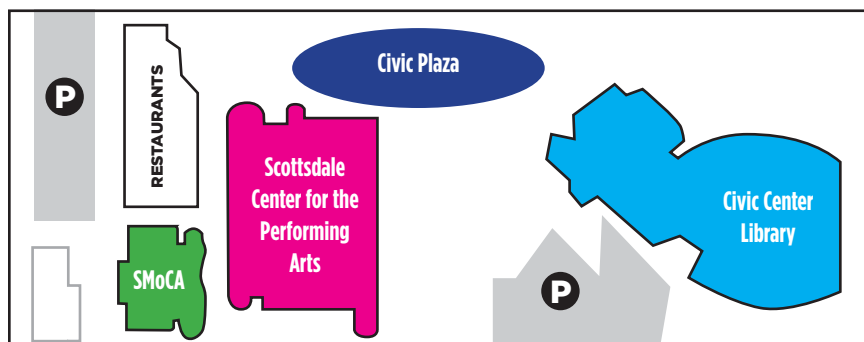
PROGRAM OVERVIEW

Experience programs in the following 7 tracks:

1. **Computer Science & Tech** (pg 10)
2. **Future STEM Pathways** (pg 12)
3. **School STEM Best Practices** (pg 13)
4. **Arizona SciTech Fest Meet the Mentors** (pg 16)
5. **Social Equity & STEM** (pg 17)
6. **Student Voice** (pg 18)
7. **STEM in Our Community** (pg 18)

Visit over 70 Exhibitors in 4 locations!

1. **Atrium** – 55+ exhibitors
2. **Gallery** – 8 maker related exhibitors
3. **Civic plaza (just outside SCFPA)** – Automotive Museum & Roosevelt Elementary Child Nutrition Services Food Cart
4. **Eureka Space** – AZ Robotics Showcase / Cyberhacking / Coding

MAP

Scottsdale Center for the Performing Arts
- **VGP** – Virginia G. Piper Theater
- **Atrium** – Dayton Fowler Grafman Atrium
- **Gallery** – Young @ Art Gallery
- **Stage II**
- **MCR** – Mezzanine Conference Room

Civic Plaza
Food trucks & Auto exhibit

Civic Center Library
- **Lib. Aud.** – Library Auditorium (basement)
- **Forum** – Library Forum (basement)
- **LCRI** – Library Conference Room 1 (basement)
- **LCRII** – Library Conference Room 2 (basement)
- **Eureka Space A/B** (2nd floor)

SMoCA
SMoCA Lounge

PROGRAM SCHEDULE

See **ROOM MAP** on page 5. • Chart colors indicate track themes. See **SESSION DESCRIPTIONS** starting on page 10.

Time	Session	Room	Track
7:45 – 9:00	Registration, Networking Breakfast, Exhibitors	Atrium / Gallery	Exhibitors
9:00 – 10:00	Kickoff Session & Keynote	VGP	Future STEM Pathways
10:15 – 11:00	Hera, Give Me Strength: The Science of Wonder Woman	VGP	Social Equity & STEM
	Drones & Autonomous Vehicles	Stage 2	Future STEM Pathways
	Student-Led Events	MCR	Meet the Mentors
	60+ Exhibitors / Makers	Atrium / Gallery	Exhibitors
	Student Perspective on Future STEM Pathways	SMOCA	Student Voice
	Enhanced Outreach w/ Distance Learning Technologies	Lib. Aud.	Future STEM Pathways
	Hackathons	Forum	CS & Tech
	Modeling STEM Instruction	LCR1	School STEM Best Practices
	Outdoor STEM-Centered Education	LCRII	STEM in Our Community
	AZ Robotics / Cyberhacking / Coding	Eureka A	Exhibitors
	Industry Impacts on STEM Education & Robotics	Eureka B	CS & Tech
11:15 – 12:00	Desert Detectives – How STEM is Preserving Our Last, Best Places	VGP	STEM in Our Community
	Social Justice in STEM Education	Stage 2	Social Equity & STEM
	Attracting Media With Your Event Story	MCR	Meet the Mentors
	60+ Exhibitors / Makers	Atrium / Gallery	Exhibitors
	Chief Science Officers & Civic Action	SMOCA	Student Voice
	The Impact of Code.Org on Education and Policy	Lib. Aud.	CS & Tech

Time	Session	Room	Track
11:15 – 12:00 continued	Creating a STEM Culture in Schools	**Forum**	School STEM Best Practices
	Making Math Meaningful in Your K-5 STEM Classroom	**LCR1**	School STEM Best Practices
	AZ Robotics / Cyberhacking / Coding	**Eureka A**	Exhibitors
	Building Innovation through Robotics	**Eureka B**	School STEM Best Practices
12:00 – 1:15	**LUNCH – Food Trucks, Restaurants, On Site Pick Up**		
12:15 – 1:00	60+ Exhibitors / Makers	**Atrium / Gallery**	Exhibitors
	Event Planners Lunch Meet Up	**MCR**	Meet the Mentors
	Emergence Lunchtime Performance	**SMOCA**	STEM in Our Community
	Arizona's Got STEM Talent III Lunchtime Performance	**Lib. Aud.**	Student Voice
	Women in Tech Speed Networking Lunch	**Forum**	CS & Tech
1:15 – 2:00	Citizen Science 2.0: Expanding Reach & Results	**VGP**	STEM in Our Community
	Personalized Medicine, The Future Has Started in AZ	**Stage 2**	Future STEM Pathways
	Building Collaborations	**MCR**	Meet the Mentors
	Making Maker Spaces	**SMOCA**	STEM in Our Community
	60+ Exhibitors / Makers	**Atrium / Gallery**	Exhibitors
	Tales From the Arizona Cyber Warfare Range	**Lib. Aud.**	Future STEM Pathways
	Extracurricular Coding Clubs	**Forum**	CS & Tech
	Code.Org Educator Training	**LCR1**	School STEM Best Practices

PROGRAM SCHEDULE

See **ROOM MAP** on page 5. • Chart colors indicate track themes. See **SESSION DESCRIPTIONS** starting on page 10.

Time	Session	Room	Track
1:15 – 2:00 continued	AZ Robotics / Cyberhacking / Coding	**Eureka A**	Exhibitors
	Designing Solutions Together – TODAY'S CS & Robotics	**Eureka B**	**School STEM Best Practices**
2:15 – 3:00	STEAM is Hot… Literally	**VGP**	**STEM in Our Community**
	Dig Into Mining Innovation	**Stage 2**	**Future STEM Pathways**
	Theming Your Event	**MCR**	**Meet the Mentors**
	60+ Exhibitors / Makers	**Atrium / Gallery**	Exhibitors
	Linking STEM Mentors with the Classroom	**SMOCA**	**Social Equity & STEM**
	Tech in the Classroom	**Lib. Aud.**	**CS & Tech**
	STEMAZing – STEM on a Budget	**Forum**	**School STEM Best Practices**
	Code.Org Educator Training	**LCR1**	**School STEM Best Practices**
	AZ Robotics / Cyberhacking / Coding	**Eureka A**	Exhibitors
	The Intersection of Cognitive Neuroscience & Ed Tech	**Eureka B**	**School STEM Best Practices**
3:15 – 4:00	Internet of Things	**VGP**	**Future STEM Pathways**
	Hispanic STEM Success in Arizona	**Stage 2**	**Social Equity & STEM**
	Make it S.T.E.A.M.–Y	**MCR**	**Meet the Mentors**
	STEM Tourism and Sneaky Science	**SMOCA**	**STEM in Our Community**
	60+ Exhibitors / Makers	**Atrium / Gallery**	Exhibitors
	Regenerative Medicine Transformations	**Lib. Aud.**	**Future STEM Pathways**
	Code.Org Educator Training	**LCR1**	**School STEM Best Practices**

ITSA
Immersive Teaching STEAM Academy

High Quality STEAM Education through Project-Based Learning

Instructor-led Projects in:

- Robotics
- 3D Modeling
- 3D Printing
- 3D Scanning
- Keyboarding
- Google Apps
- Coding
- Programming
- Game Design
- Web Design
- Movie Making
- Movie Editing
- Green Screen & Visual Effects
- Graphics & Animation
- Virtual Reality
- and More!

INNOVATE

We innovate by continually developing new projects and course materials, to supplement the knowledge gained in schools.

INSPIRE

We inspire tomorrow's future by helping their creativity come to life. Fun & exciting projects motivate kids to pursue STEAM subjects.

EDUCATE

We educate using technology as the foundation of our projects and teach skills that are in demand in today's high-tech world.

The more they do, the more they learn.

SESSION DESCRIPTIONS

Designing Solutions Together – TODAY'S CS & Robotics

1:15 – Eureka B

Learn how the VEX IQ and VEX robotics system can help inspire the next generation of programmers K – University.

Extracurricular Coding Clubs

1:15 – Forum

This round table discussion covers how to support your school or student (of any age) as they start up a coding or CS class. Learn best practices, tips and tricks to make an awesome coding club from various educators, parents and community leaders.

Hackathons

10:15 – Forum

This panel of Arizona-grown hackathons will discuss the impact hackathons can have on education, community building and innovation and how they can create new technology and undercover creative solutions.

Industry Impacts on STEM Education & Robotics

10:15 – Eureka B

Why and how does your local industry promote hands-on robot building for K-16 student competitions? What's in it for them and you? Learn how to garner support from academia, industry and the community to prepare students for the workforce, grow the economy, and build a better future.

Tech in the Classroom

2:15 – Lib. Aud.

Students and educators discuss how utilizing technology as a teaching tool has changed how they share and learn.

Engineering Solutions to Education's Toughest Challenges.

STEM
ACADEMIC STANDARDS
INSTRUCTIONAL IMPROVEMENT DATA
EDUCATOR EFFECTIVENESS
OPPORTUNITIES FOR YOUTH
SCHOOL FINANCE
GOVERNING BOARD ELECTIONS

mcesaaz

MCESA
Maricopa County Education Service Agency

The Impact of Code.Org on Education and Policy

11:15 – Lib. Aud.

Coding, STEM and CS can be powerful tools in the classroom. This panel will discuss how educators and policy makers can support a more STEM/CS-friendly educational approach and its potential impact on students and the economy.

Women in Tech Speed Networking Lunch

12:15 – Forum

The AZ SciTech Kickoff Conference is a great place to meet new people with similar interests in STEM and complementary skills, but have you ever been to a networking event where you wanted to make the transition from meeting one person into meeting the next person? Awkward, right? Not so in the Women in Technology Speed Networking session.

[FUTURE STEM PATHWAYS]

Dig into Mining Innovation

2:15 – Stage 2

Learn about both the cool innovation happening in the mining industry and the STEM skills necessary to get there, including big data, IoT and unmanned aerial system technologies.

Drones & Autonomous Vehicles

10:15 – Stage 2

Remote controlled vehicles used to require substantial skill to operate. With modern computing, such devices are now capable of flying/driving autonomously. What fascinating new possibilities and products does this enable, and what pitfalls do we need to avoid?

Enhanced Outreach w/ Distance Learning Technologies

10:15 – Lib. Aud.

Videoconferencing technology is providing access to healthcare and valuable educational experiences in the most remote parts of our state. Learn how distance learning technology can give YOUR program the ability to reach a broader audience no matter where you are based.

Internet of Things

3:15 – VGP

Today, even lightbulbs, thermostats, and toys have microprocessors in them and can connect to the internet. What does this mean for us now, and what amazing feats will this allow us to accomplish in the future? Ask the experts at the forefront of the field.

Parallel Perspectives: Viewing Earth from Space and Discovering Space on Earth

9:00 – VGP

See page 4 for details

Personalized Medicine, The Future Has Started in AZ

1:15 – Stage 2

Personalized medicine means the right drug for the right patient at the right time. Hear from experts at various stages in the workforce how Arizona is building a solid foundation with strong HS programs, top-tier University research, applied clinical research and industry collaborations.

Regenerative Medicine Transformations

3:15 – Lib. Aud.

Learn about the stem cell science that is transforming how physicians can treat and cure over 80 deadly diseases. Meet a transplant physician and a child who's life was saved with donated cord blood.

Tales from the Arizona Cyber Warfare Range

1:15 – Lib. Aud.

Learn from field experts what goes on at the Arizona Cyber Warfare Range, how you can keep yourself and your devices safe online and how you can become part of the rapidly-growing cybersecurity industry.

[SCHOOL STEM BEST PRACTICES]

Building Innovation through Robotics

11:15 – Eureka B

Robotics can be a useful forum for engaging students in engineering and teamwork through the fun and competitive nature of sport. Learn from middle and high school robotics club presidents on how to start and maintain a robotics club in your school or community.

Thanks to the 2017 Arizona SciTech Festival EARLY BIRD SPONSORS

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Special Thanks to Our Foundational Partners

Arizona Technology Council Foundation, Arizona Science Center,
University of Arizona, Arizona State University,
Arizona Board of Regents, Arizona Commerce Authority

Code.Org Educator Training
1:15, 2:15, 3:15 – LCRI

Teachers around the state are becoming proficient at teaching code through code.org. Start your training experience with code.org with this inaugural teaser session.

Creating a STEM Culture in Schools
11:15 – Forum

Having a STEM culture is not just about the availability of core STEM subjects, it's about having a STEM mindset and providing an environment to apply the skillsets to their everyday lives. Join this "speed dating"-style session and engage in a conversation with AZ STEM school leaders.

The Intersection of Cognitive Neuroscience & Ed Tech
2:15 – Eureka B

Join this collaborative session that explores the relationship between cognitive neuroscience, educational psychology, and technology. Learn how the intersection of these fields can provide a deeper and more meaningful learning environment for all students.

Making Math Meaningful in Your K-5 STEM Classroom
1:15 – LCRII

Math helps students describe, understand, and challenge the world around them. So how do we equip students to apply math in real-life situations? Join us as we examine practical ways for embedding mathematics into your STEM classroom.

Modeling STEM Instruction
11:15 – LCRII

How do scientists solve everyday problems? Experience this activity to engage students in the discovery of how science works in the real world.

STEMAZing – STEM on a Budget
2:15 – Forum

STEM can be expensive, but it does not have to be! Get your hands on rich learning experiences that you can provide to PreK-12th grade students using #STEMontheCheap hacks and materials.

[SCITECH FEST MEET THE MENTORS]

Attracting Media with Your Event Story

11:15 – MCR

As an event organizer, you will want to extend your story and brand to attract more visitors and garner publicity. Our experienced panelists will share best practices and trends to accomplish your communication goals.

Building Collaborations

1:15 – MCR

Join leaders from the Chandler Science Spectacular, the Verde Valley SciTech Festival, and the Prescott Regional SciTech Festival to learn how they leveraged these events to build cross-sector community partnerships.

Event Planners Meet Up

12:15 – MCR

What are you doing for lunch? If you are an event organizer or looking to learn from one, why not join the "Event Planners Meet Up," an informal lunchtime session in which event planners can come together to share best practices with one another.

Make it S.T.E.A.M.–Y

3:15 – MCR

Learn how creativity and play can provide clarity around innovating and integrating S.T.E.A.M into business and educational practices with a focus on Process over Product.

Student-Led Events

10:15 – MCR

Did you know that several of the SciTech Festival events that happen during Festival season in February and March are actually planned and run by students? Join four of these students who will share how they turned their ideas into STEM event successes!

Theming Your Event

2:15 – MCR

How do you come up with a strong theme for your event that will drive attendance and rally your content providers? Learn from the best as they present ideas on how they have come up with some of the most exciting and long-standing STEM festivals in Arizona!

[SOCIAL EQUITY & STEM]

Hera, Give Me Strength: The Science of Wonder Woman

10:15 – VGP

Join Phoenix Comicon's Science Programming Team as we celebrate the 75th anniversary of Wonder Woman: Amazon Princess, Army Nurse and one of the first female superheroes. Created by William Moulton Marston (psychologist, lawyer, inventor of the lie-detector), Wonder Woman, with her lasso of truth and invisible jet, enjoys a resurgence of interest with a new movie release in June 2017. Our panel of experts will discuss women in the military, the science of deception and the current status of stealth technology.

Hispanic STEM Success in Arizona

3:15 – Stage 2

The Hispanic community is underrepresented in most STEM fields, but stories of their success in Arizona are movie material. Who would have thought that high school students would design, built robots and compete against top Universities? Presented by Chicanos por la Causa, this panel of up-and-coming Hispanic leaders will share their stories of STEM success and future aspirations.

Linking STEM Mentors with the Classroom

2:15 – SMoCA

Join round table discussions on the values and challenges of connecting STEM business and industries with schools. STEM Professionals will discuss with audiences their experiences and insights about working with students and schools.

Social Justice in STEM Education

11:15 – Stage 2

This session explores the educational landscape of Arizona's underserved students. Panelists will share ways that disadvantaged students fare in our education system, programs that exist and personal stories of diverse individuals who entered STEM through academic and industry paths.

SESSION DESCRIPTIONS

Arizona's Got STEM Talent III

12:15 – Lib. Aud.

It's back by popular demand! These amazing students will showcase engaging STEM-based demonstrations in our 3rd annual Arizona's Got STEM Talent Show!

Chief Science Officers & Civic Action

11:15 – SMoCA

Join some of the nation's first student Chief Science Officers as they discuss their aspirations with civic engagement and STEM. From presenting at the White House to collaborating with the AZ Governor's Office, CSOs are transforming the nation's STEM landscape through student voice.

Student Perspective on Future STEM Pathways

10:15 – SMoCA

What do students think about this year's conference theme—Future STEM Pathways? What are their impressions, outlooks and aspirations? Take this opportunity to hear directly from our future workforce.

[STEM IN OUR COMMUNITIES]

Citizen Science 2.0: Expanding Reach, Expanding Results

1:15 – VGP

Join this panel discussion to learn how SciStarter facilitates scientific research by connecting citizen scientists, formal and informal research projects and events, and the Science Cheerleaders through citizen science activities.

Desert Detectives – How STEM is Preserving Our Last, Best Places

11:15 – VGP

Preserving the Valley's natural environment requires understanding its complex ecosystem and the means through which it interacts with humans and development. That's were science comes in. Join us for a fascinating discussion on what we're learning about the desert and how it can help us preserve and enhance our quality of life, economic development and tourism.

Emergence Lunchtime Performance
12:15 – SMoCA

Emergence is an immersive performance that will engage the audience in a discussion of what a life well-lived looks like, and how we collaborate and connect to live well. Performers will host a Q&A with audience members after the performance.

Making Maker Spaces
1:15 – SMoCA

With hands-on experiences being highly valued by parents, educators and students, Maker Spaces have been increasing in numbers. Facilitators of Maker Spaces in the Valley will discuss approaches, best practices and common challenges of developing a Maker Space community.

Outdoor STEM-Centered Education
10:15 – LCRII

How can outdoor learning experiences contribute to meaningful classroom experiences? During this workshop, participants will gain knowledge about the role of outdoor education in our society and our classrooms grades 3-8.

STEAM is Hot... Literally
2:15 – VGP

Presented by the Gallery at Tempe Center for the Arts, this fast-paced panel highlights some of the hottest examples of STEAM integration happening in Arizona. Speakers will hit on subjects such as medical microscopy, 3D spatial modeling, forensic facial reconstruction and biomimicry.

STEM Tourism
3:15 – SMoCA

Science tourism is becoming a sought-after travel experience where the experiential becomes educational with a STEM focus. Some argue that tourism has always been a science. Discuss best practices and industry insights with local experts.

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