KC STEM Summit 2018
Kauffman Foundation Conference Center
Thursday, August 23, 2018
Welcome
Martha McCabe, Exec. Director, KC STEM Alliance
Goals for the Day

Connect
Meet & connect with other STEM program providers.

Communicate
Learn about tools to help communicate & connect with families.

Collaborate
Find opportunities to collaborate.
Agenda

• Welcome
• Intros & Priorities – Table Conversation
• Overview of KC STEM Alliance
• Making Real Connections – Table Conversation
• Connecting for STEM – Tools, Technology & Events
  • With Families
  • With Classrooms
  • With Workforce
• Networking Lunch & Technology Demos
Connect

• Choose a recorder and a reporter
• Introductions at your tables
  • Organization
  • Name and your role
  • Most unusual vacation
• Share top 3-4 issues your organization faces regarding your STEM programs.
  • Identify 1-2 common issues facing all organizations at your table.
• Report out to larger group
  • Your name/organization
  • Organizations at your table
  • Top 1-2 common issues
  • Most unusual vacation
Who’s Missing?

- Colored notecards at your tables
- Provide name of organization/contact
- Your name/organization
KC History - STEM

2005: Growing awareness of STEM Workforce Gap
Kauffman Foundation Strategic Plan – Focus on STEM

2007-2011: Regional support & implementation of national best practice STEM programs
- Project Lead the Way (in-school)
- FIRST Robotics (out-of-school)
- Summer camps
- Educator professional development

2012-2015: KC STEM Alliance started to increase equity/access and encourage collaboration between schools, out of school programs and industry partners
• **STEM Learning Ecosystems** provide the architecture for cross-sector learning, offering all young people access to STEM-rich learning environments so they can develop important skills and engagement in science, technology, engineering and math throughout preK-16.

• ~STEM Funder’s Network, 2015
Why STEM Learning Ecosystems?

• Connect students to learning across all parts of the community
• Align in-school and out-of-school experiences
• Nurture STEM Identity
• Address barriers to improve access for all
• Engage young people in real world problem solving and introduce to STEM mentors and careers
• Help parents support student success
• Match STEM learning pathways with STEM workforce needs
KC STEM Alliance Proposal
Partnered with organizations representing industry, out-of-school time and science center
2015: Kansas City Receives Ecosystem Designation

- Cohort I
- Part of National Community of Practice
- Peer-to-peer support; national convenings & webinars
- Technical Assistance & support (2 yrs)
- Does not include funding
Year 4: 68 STEM Learning Ecosystems
Cohorts 1,2,3 & 4
Ecosystem Leadership Team
Mission: Increase access and equity to quality STEM programs

Vision: A robust STEM workforce & STEM literate community

Core Values:
- Share high quality best practices
- Decrease duplication of efforts
- Leverage community assets
- Build on strengths of partner organizations
2018 - 2020: KC STEM Alliance (Ecosystem Structure)

**Ecosystem Leadership Team**
- Role: Lead regional collaboration on STEM Initiatives; Workgroups

**Funders & Advisory Board (UMKC)**
- Role: Secure resources, volunteers, work-based learning opportunities

**STEM Funders Collaborative**
- Role: Pooled funding source; New program support (TBD); Corporate best practices

**Ecosystem Partner Organizations**
- Role: Provide or support STEM programs; Collaborate around common interests

**KC STEM Alliance**

**KC STEM role:** Convene, Coordinate & Communicate

**PlTW, FIRST, KC Engineering Zone, STEM Co-working Site, Programs for Under-represented**

**Ecosystem Coordinator**
- Resource Hub/Website Portal

**Scholarships, Grant support to teams, Impact; Evaluation**
KC STEM Alliance Financials – FY 18-19

INCOME - $1,180,000

- Gifts - Fdn, Corp, Univ, Govt - $750,000 (64%)
- Grant - Kauffman - $400,000 (34%)
- Event Revenue - $30,000 (2%)

EXPENSES - $1,180,000

- FIRST - $434,000 (37%)
- Admin - $200,000 (17%)
- School STEM - $187,000 (16%)
- Diversity - $255,000 (22%)
- Ecosystem - $100,000 (8%)
Role of KC STEM Alliance

- Champion
  • Champion all things STEM! Understand the landscape...advocate.

- Communicate
  • Communicate effectively – Increase STEM awareness

- Convene
  • Convene partners around common interests & priority areas

- Connect
  • Connect partners with resources & Connect learners with opportunities

- Collaborate
  • Collaborate everywhere to leverage synergies

- Celebrate
  • Celebrate best practices and successes!
How can KC STEM Alliance support you?

EXPLORE GRANT OPPORTUNITIES – CO-WRITE GRANTS;

MATCH-MAKING – CONNECT WITH RESOURCES & OTHER PARTNERS

ADVOCACY – NATIONAL, STATE AND REGIONAL

IMPLEMENT REGIONAL TOOLS THAT INCREASE CAPACITY ACROSS THE ECOSYSTEM

PROVIDE STRATEGIC PLANNING SUPPORT – LIMITED DONOR ADVISED GRANT MAKING
<table>
<thead>
<tr>
<th>Priority Areas - Workgroups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Engagement</td>
</tr>
<tr>
<td>Educator Professional Development</td>
</tr>
<tr>
<td>Youth Transportation</td>
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<tr>
<td>Communications &amp; Technology</td>
</tr>
<tr>
<td>Common Sector Competency Integration*</td>
</tr>
<tr>
<td>Industry Recognized Credentialing*</td>
</tr>
</tbody>
</table>

* KC Rising Initiative
Family Engagement

• Work with in-school and out-of-school partners to identify strategies to increase family engagement and connect learners with STEM opportunities.

• Chairperson: Andrea Ellis, KC Public Library
Educator Professional Development

• Work with in-school and out-of-school providers to align professional development opportunities and encourage best practice STEM learning strategies (problem based learning; design thinking; growth mindset)

• Interim Chair: Ann Zimmerman, KC STEM Alliance
Youth Transportation

- Convene cross-sector partners to better understand depth of problem, brainstorm strategies and advocate for possible solutions; Investigate and pilot specific strategies.
- Chair: Marcia Dvorak, KS Enrichment Network
Communications & Technology

• Identify needs of stakeholders and implement technology platforms and tools that can help grow and strengthen the STEM learning ecosystem.

• Chair: Aaron Deacon, KC Digital Drive
• Callen Zind, KC STEM Alliance
Common Sector Competency Integration

- Identify strategies to raise awareness of the common skills/competencies needed across all sectors; Identify ways to measure mastery and support educators in finding ways to integrate the competencies into the classroom and programs.

- Chair: Sheri Gonzales Warren, MARC
Industry Recognized Credentialing

• To recruit, train and credential workers in life sciences, industry and education partners are working together on pathways and training opportunities. The Life Sciences Regional Advisory Board is leading this work through KC Rising.

• Chair: Keith Gary, BioNexus KC
Make a REAL Connection

• Identify a timekeeper

• Identify a problem or issue with your STEM program. (i.e. funding, audience building, marketing, etc.) (1 min./organization)

• Table participants actively brainstorm as many resources, contacts and connections as possible. (5 min each)

• Each organization records the list of connections.

Make that connection... Networking session
Introducing STEM Connect KC

- A central resource for the Kansas City region to explore and discover STEM programs and opportunities.
STEM CONNECT KC TOOLS

**WHO**
Searchable directory of STEM program providers in Kansas City region

**WHAT/WHEN**
Events, classes and other timebound opportunities (scholarships, competitions)

**WHY**
E-newsletter Social media STEM stories
STEM Connect KC – Provider Directory

Search this listing to discover organizations offering opportunities to explore science, technology, engineering and mathematics (STEM) in greater Kansas City. To find opportunities for a specific timeframe, search the STEM Connect KC calendar. If you're a STEM program provider and would like to include your information, contact us today!

Organizations

BioNexus – KC
KANSAS CITY, MO 64108
Audience Served: Educators, e.g., teacher professional development, students College/post-secondary, Students high school, Students: Middle school
Focus Areas: Biology, Entrepreneurial innovation, Opportunities to strengthen and be recognized for quality STEM programs, Technology

Kansas City Area Education Research Consortium
LAWRENCE, KS 66044
KC-AREC supports STEM by providing strategic planning, professional develop.
Audience Served: Community at large, general public, education, e.g., teacher professional development
Focus Areas: Opportunities to network with others, Staff training opportunities in STEM

Filter

Search
Keyword
Zip Code
City
Distance

Type
- 4-year College/University
- Community College or Trade school
- Community Organization/Advocacy/Support
- Community Organization/STEM rich Institution (501c3)
- Corporation or Business
- Elementary School
- Governmental organization

Science City at Union Station

Address: 30 West Pendergast Road, Kansas City, MO 64108
Email: education@unionsation.org
Phone: 816-480-2000
Website: https://www.unionsation.org/sciencecity/education

Awards the 2019 Association of Science-Technology Centers Internationally Leading Edge Award for Visitor Experience and recognized as one of the Top 20 Science Centers in the country by Parents Magazine. Science City annually educates and entertains thousands of science-inclined youth of all ages. Science City at Union Station, Kansas City, is a dynamic hands-on science center featuring 200+
STEM Connect KC monthly enewsletter + social

• KC STEM Alliance currently reaches 4,500+ with monthly enewsletter.

• Unlike directory and calendar, newsletter provides an opportunity to add context, tell stories and illustrate why this work matters.

• Newsletter format/distribution will evolve in conjunction with roll out/promotional plan.
How would you best describe your organization? *

- Museum/library/STEM-rich institution or attraction
- Community organization/Advocacy/Support
- Other STEM program provider
- Pre-K Organization
- Elementary School
- Middle School
- High School
- Community College or Trade School
- 4-year College/University
- Governmental Organization
- Corporation/Business
- Other
DATA COLLECTION
Submit profile form, logos, photos
Add events and opportunities to calendar
Submit ideas for newsletter/features

TESTING/PLANNING
STEM Connect KC directory: Goes live on kcstem.org 10/1/18
Test with families, STEM navigators, educators through 11/30/18
Fine-tune through 12/31/18

ROLLOUT
Roll out new navigation on kcstem.org
Introduce new format for monthly e-newsletter
Launch STEM Connect KC promotional plan

THROUGH SEPT. 10  OCTOBER-DECEMBER  JANUARY 2019
Why participate?

• Raise visibility and awareness of your STEM programming
• Find new opportunities to engage, collaborate and strengthen our STEM ecosystem
• Amplify all things STEM through a central hub
• Avoid event scheduling conflicts
Next Steps

- **Watch**
  - Look for an email with data entry form on **Monday, August 27.**

- **Return**
  - Send your profile information by **SEPTEMBER 10**

- **Submit**
  - Submit story ideas and calendar items at any time

- **Connect**
  - Let us know what questions you have

- **Engage**
  - We want to make it as easy as possible for everyone to participate!
CONNECTING INDUSTRY PROFESSIONALS TO EVERY CLASSROOM!

We make it easy for teachers in the bi-state Kansas City region to invite industry professionals into the classroom to bring real-world relevance into learning.

prepkc.nepris.com

PREP-KC’s INDUSTRY-INFORMED INSTRUCTION CONNECTOR

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The Nepris Platform

Create
Instructors can request for industry experts to help support classroom activities aligned to curriculum needs or join an industry offered virtual chat.

Curate
Nepris finds the right industry professional(s) with skills that match the topic requested (local or national).

Connect
Industry professionals can virtually connect with classrooms to bring relevance, mentor students on projects or evaluate student work.
<table>
<thead>
<tr>
<th><strong>The Connector for Out of School STEM Program Providers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Givers”</strong></td>
</tr>
<tr>
<td>• Outreach</td>
</tr>
<tr>
<td>• Recruitment</td>
</tr>
<tr>
<td>• Exhibition</td>
</tr>
<tr>
<td><strong>No cost to offer sessions to schools on the Connector</strong></td>
</tr>
<tr>
<td><strong>“Users”</strong></td>
</tr>
<tr>
<td>• Connecting with Experts</td>
</tr>
<tr>
<td>• Project mentoring &amp; advising</td>
</tr>
<tr>
<td>• Virtual Tours</td>
</tr>
<tr>
<td>• Student Exhibitions and Feedback from professionals</td>
</tr>
</tbody>
</table>

*Limited access to the Connector for free; Cost of premium license based on organization size and structure.*
Digital platform to help teachers find and connect with speakers to engage with students in a classroom setting

Ignites interest where it wasn’t there before

Now recruiting STEM professionals with a variety of backgrounds

Sign up at SPEAKSTEM.ORG
Find your next STEM speaker
STEM Program Providers welcome and encouraged to be exhibitors

Contact: Emily Meyer
KC STEM Rally

• Hosted by Boy Scouts of America
• All-day event; 8am – 3pm
• 2 Sessions of field trip groups
• Learn about Camp Naish & STEMovation Lab
• Share your company’s STEM story and STEM Education opportunities
• Provide hands-on activities to get kids excited and interested in your company and STEM
• Identify other STEM resources in the region
• Contact: Brendan.Bagby@scouting.org
Promoting Workforce Agility

Darren Woodruff and Robin Smith
Learn More About Your Agilities

YOUR TOP AGILITIES

help you work faster and more flexibly in your career.
Take the Agile Work Profiler at:
www.agilities.org
Agile Work Profiler Benefits

- Quick assessment of your work skills and interests
- Explore jobs in Kansas City by your top Agilities
- Find certificate and degree programs that match your career goals
- Learn about salary and job requirements
Use these interactive charts to discover career ideas and learn more about local job demand, education and wages.

Check out Local Demand.
Explore the jobs that were listed online for hire in 2017.

# of 2017 Job Openings (KC Metro)
65,911

Avg Education Score
3.4

Median Annual Wage (KC Metro)
$55,416

Percentage of 2017 KC Metro Job Openings by Agility
Serving and Caring: 9.95%
Judging and Estimating: 3%
Managing: 13.21%
Selling and: 5.11%
Operating Objects: 32.81%

Occupation by # of KC Metro Job Openings
KC Metro Title
Retail Salespersons
Combined Food Preparation and Servi...
First-Line Supervisors of Retail Sales ..
Heavy and Tractor-Trailer Truck Drivers
Registered Nurses
Sales Representatives, Services, All O..
Customer Service Representatives
First-Line Supervisors of Food Prepara..
Stock Clerks and Order Fillers

Source: Mid-America Regional Council, JobsEQ. For more great stats visit www.marc.org
Traded Sectors

- Advanced Manufacturing
- Information Technology
- Engineering & Architecture
- Life Sciences
- Finance & Insurance
CULTIVATING TALENT
A WORKFORCE PERSPECTIVE
FROM KC RISING
Align Curriculum to New and Emerging Areas

<table>
<thead>
<tr>
<th>KC RISING INDUSTRY SECTORS*</th>
<th>NATIONAL CAREER CLUSTERS FRAMEWORK</th>
<th>KANSAS CTE PROGRAMS</th>
<th>MISSOURI CTE PROGRAMS</th>
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</thead>
<tbody>
<tr>
<td>LIFE SCIENCES</td>
<td>Agriculture, Food &amp; Natural Resources</td>
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<td>✓</td>
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<tr>
<td></td>
<td>Architecture &amp; Construction</td>
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<td>✓</td>
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<tr>
<td></td>
<td>Arts, A/V Technology &amp; Communications</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>FINANCE &amp; INSURANCE</td>
<td>Business Management &amp; Administration</td>
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<td>✓</td>
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<tr>
<td></td>
<td>Education &amp; Training</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td></td>
<td>Finance</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>INFORMATION TECHNOLOGY</td>
<td>Government &amp; Public Administration</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td></td>
<td>Health Science</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td></td>
<td>Hospitality &amp; Tourism</td>
<td>✓</td>
<td>✓</td>
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<td></td>
<td>Human Services</td>
<td>✓</td>
<td>✓</td>
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<td>Information Technology</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ADVANCED MANUFACTURING</td>
<td>Law, Public Safety, Corrections &amp; Security</td>
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<td>✓</td>
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<tr>
<td></td>
<td>Manufacturing</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ARCHITECTURE &amp; ENGINEERING</td>
<td>Marketing</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SUPPLY CHAIN LOGISTICS</td>
<td>Science, Technology, Engineering &amp; Math</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Transportation, Distribution &amp; Logistics</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Increase Diverse Talent Base

Design Professionals by Race/Ethnicity* | KC vs. US, 2016

- **KC**
  - White: 82%
  - Black: 6%
  - Asian: 7%
  - Other: 3%
  - Hispanic: 2%

- **US**
  - White: 74%
  - Black: 5%
  - Asian: 12%
  - Other: 8%
  - Hispanic: 2%

*White, Black, Asian and Other categories exclude those of Hispanic ethnicity as they are counted in the Hispanic category.

Source: IPUMS-USA, University of Minnesota, www.ipums.org, based on 2016 ACS, 5-year data.

Design Professionals by Gender | KC Metro, 2000 vs. 2016

- **2000**
  - Male: 90%
  - Female: 10%

- **2016**
  - Male: 85%
  - Female: 15%

Expanded STEM Capacity

**Percent Change in STEM Bachelor's Degrees**

<table>
<thead>
<tr>
<th>Year</th>
<th>KC</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
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<td>2013</td>
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<td>2015</td>
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<tr>
<td>2016</td>
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Source: Census Bureau ACS

**Concentration of STEM Degrees**

Bachelor's degrees in STEM fields as a share of all bachelor's degrees, KC Rising peer metros

Source: Census Bureau 2015 ACS 1-year data.
Clear Entry Point & Career Pathway For Non-Degreed Workers

INFORMATION TECHNOLOGY
Career Pathways and Job Demand in Greater Kansas City
http://kcworkforce.org/careerpath.htm

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Current Jobs</th>
<th>Average Wage</th>
<th>Entry-Level Credential</th>
<th>Growth Demand</th>
<th>Replacement Demand</th>
<th>Total Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developers, Applications</td>
<td>3,391</td>
<td>$94,100</td>
<td>Bachelor</td>
<td>+1,501</td>
<td>+600</td>
<td>+2,101</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>2,161</td>
<td>$84,100</td>
<td>Bachelor</td>
<td>+937</td>
<td>+329</td>
<td>+1,267</td>
</tr>
<tr>
<td>Software Developers, Systems Software</td>
<td>1,836</td>
<td>$95,600</td>
<td>Bachelor</td>
<td>+700</td>
<td>+274</td>
<td>+974</td>
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<tr>
<td>Computer Programmers</td>
<td>1,731</td>
<td>$75,600</td>
<td>Bachelor</td>
<td>+378</td>
<td>+374</td>
<td>+752</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>1,655</td>
<td>$50,200</td>
<td>Some college</td>
<td>+556</td>
<td>+245</td>
<td>+801</td>
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<tr>
<td>Network &amp; Computer Systems Admins.</td>
<td>910</td>
<td>$76,000</td>
<td>Bachelor</td>
<td>+260</td>
<td>+134</td>
<td>+394</td>
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<tr>
<td>Computer Network Architects</td>
<td>525</td>
<td>$95,400</td>
<td>Bachelor</td>
<td>+112</td>
<td>+72</td>
<td>+184</td>
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<tr>
<td>Computer Network Support Specialists</td>
<td>498</td>
<td>$61,700</td>
<td>Associate</td>
<td>+70</td>
<td>+72</td>
<td>+142</td>
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<tr>
<td>Web Developers</td>
<td>407</td>
<td>$58,900</td>
<td>Associate</td>
<td>+142</td>
<td>+78</td>
<td>+220</td>
</tr>
<tr>
<td>Computer Occupations, All Other</td>
<td>392</td>
<td>$84,200</td>
<td>Bachelor</td>
<td>+71</td>
<td>+65</td>
<td>+136</td>
</tr>
</tbody>
</table>
Balance Between Technical Skills & Core Competencies

Common Sector Competencies

- Fundamental: core competency
- Advanced: leader competency

Price of admission

Competitive edge

Easier to fulfill

More difficult to fulfill

COMMON SECTOR COMPETENCIES

FOR THE Kansas City REGION

A blueprint for workplace competencies addressing multiple industry sectors, customized to the needs of the Greater Kansas City region.
What Kansas City high school graduates need to be ready for the future

**LEARN**
- Growth mindset
- Curiosity & flexibility
- Self-directed learning
- Focus

**THINK**
- Critical thinking
- Discernment
- Adaptive problem solving

**RELATE**
- People-, tech- & global-savvy
- Communication
- Collaboration

**CONTRIBUTE**
- Responsibility
- Earn a living
- Find & create opportunities

**THRIVE**
- Sense-learn-adapt
- Seek & use feedback
- Courage
- Grit

**WORK**

**EDUCATION**

**LIFE LESSONS**

**REAL WORLD EXPERIENCES**
Drive to an Earlier Start

CAREER & TECH EDUCATION
IN GREATER KANSAS CITY

Preparing High School Students for the Next Step

1 Teacher Inspired by Experiential Learning

5 Classes per Day, each with 30 Students

150 Students per Semester

300 Students per Year

9,000 Students over a 20-Year Career
Connecting youth to opportunity and businesses to their future workforce.
Interested in Learning More?

Networking Lunch & Technology Demos

Workgroup Sign-up at KC STEM Table
- Family Engagement
- Educator Professional Development
- Youth Transportation
- Communications & Technology
Special Thanks to DeBruce Foundation Networking Lunch Sponsor