Driving Collaborative Outcomes

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Zack Main, PE | Strategic Energy Solutions Advisor | Trane Technologies
Thulani Jwacu | Director, Kitty Anderson Youth Science Center | SMM
Joseph Adamji | St. Director, Center for Equity and Systems Change | SMM

January 29, 2025

Introductions

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Agenda

- Relationship Background
- Introduction to Trane Technologies
- Strategic Partnership and Outcome Based Program
  - Competencies
  - Components
  - Concept Integration
- KAYSC / SMM
  - Execution
  - Integration
  - Outcomes
  - What's Next?
- Discussion / Q&A

Relationship Background

Joseph Adamji

Shared Interest

Innovation

Iteration

Authenticity

Leaning Into Possibilities

Fluid Communication

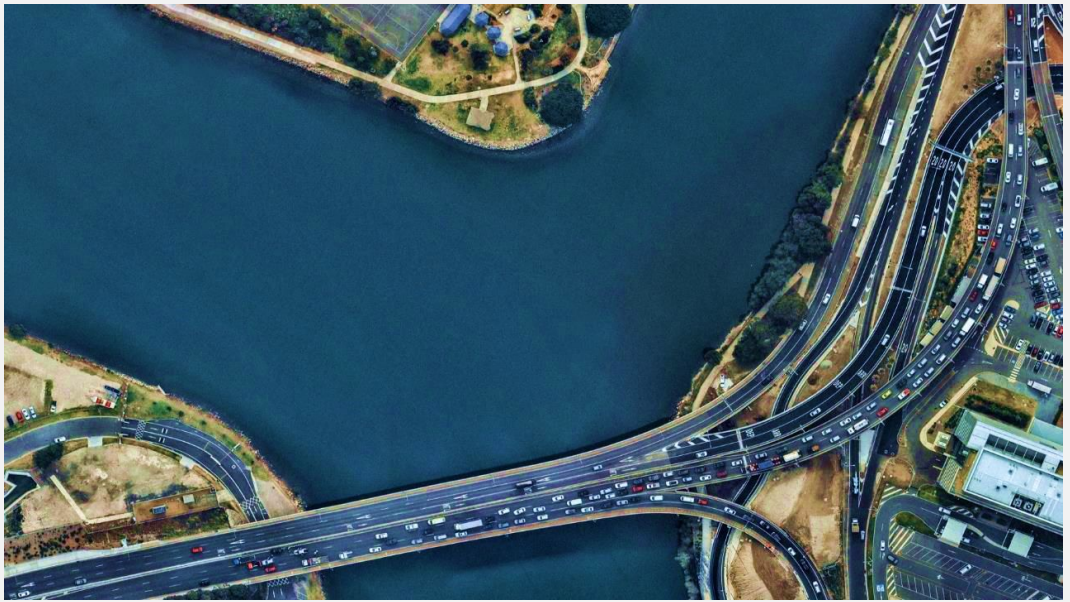
KAYSC Kitty Andersen Youth Science Center

Science Museum of Minnesota

TRANE TECHNOLOGIES

About Trane Technologies

TRANE TECHNOLOGIES™



A purpose-driven global climate innovator

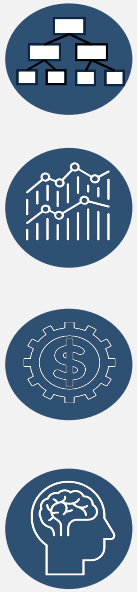
Trane Technologies is a global climate innovator advancing sustainability through our brands Trane® and Thermo King®, which bring efficient and sustainable climate solutions to buildings, homes and transportation.

TRANE TECHNOLOGIES

Trane Energy Services & Outcome Based Process

Experts in Solution Engineering

Leveraging Competencies



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Outcome Based Components

Technical

Social

Environmental

Financial

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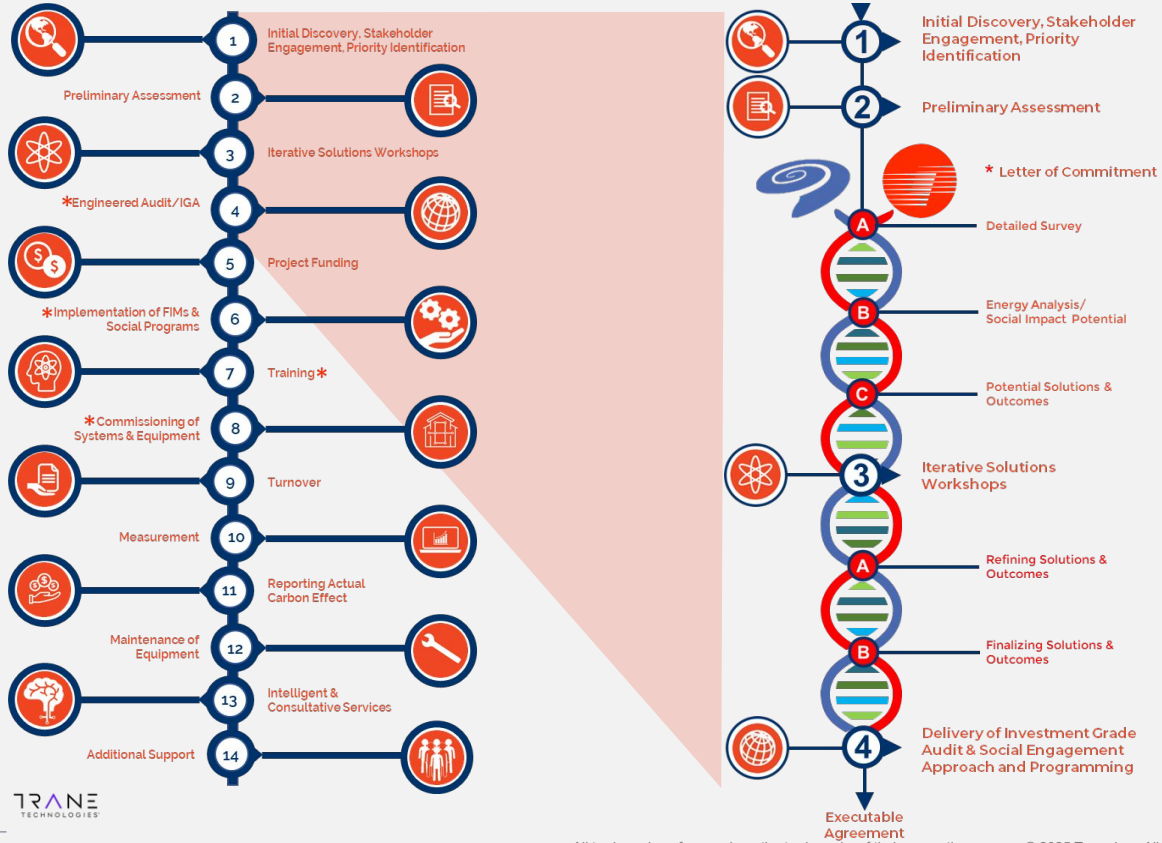
Outcome Based Approach

Blending Technical, Social, Environmental, and Financial



Engagement Stakeholder Key

TECHNICAL

ENVIRONMENTAL

SOCIAL

FINANCIAL

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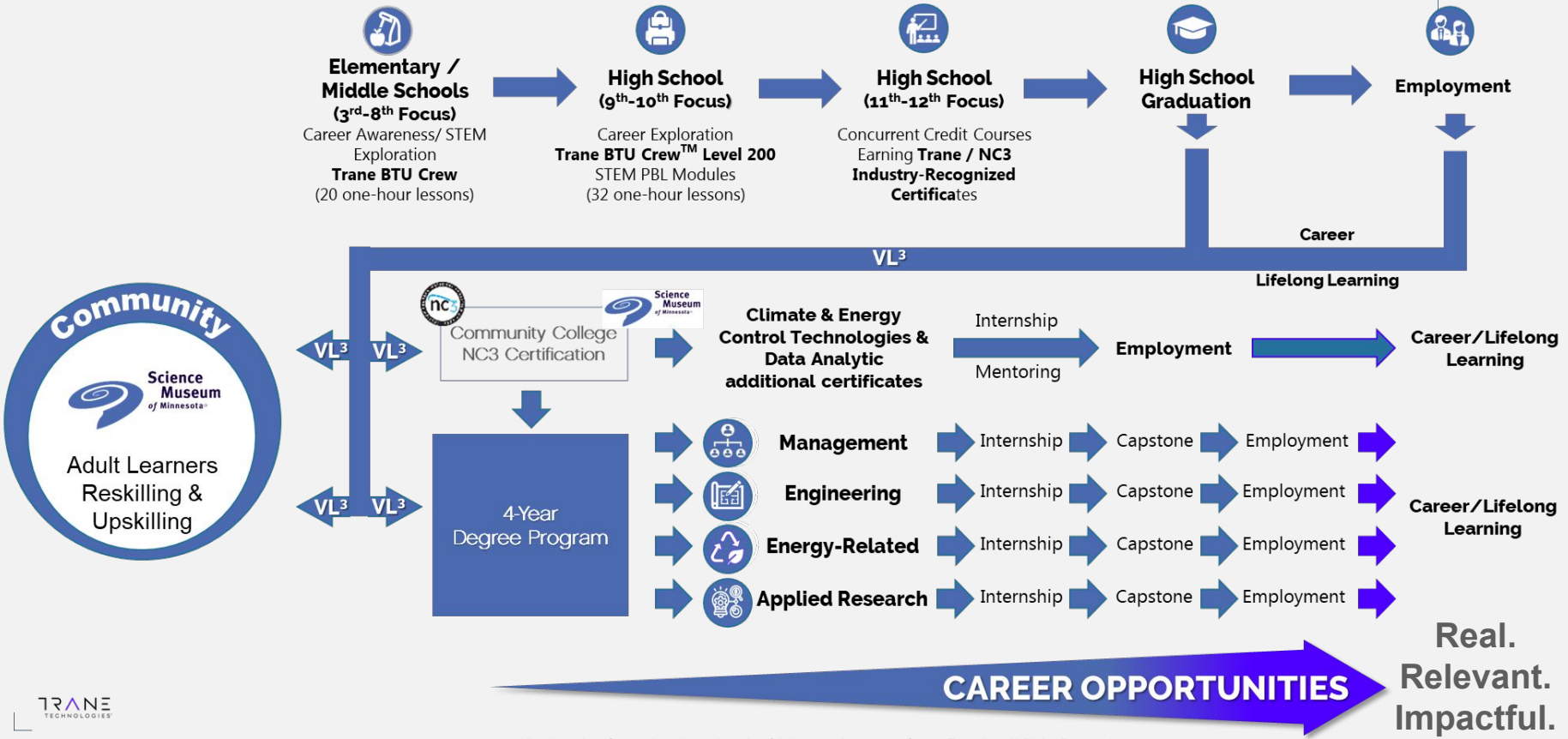
Blending Environmental & Social Outcomes

Education Engagement Pathway Journey



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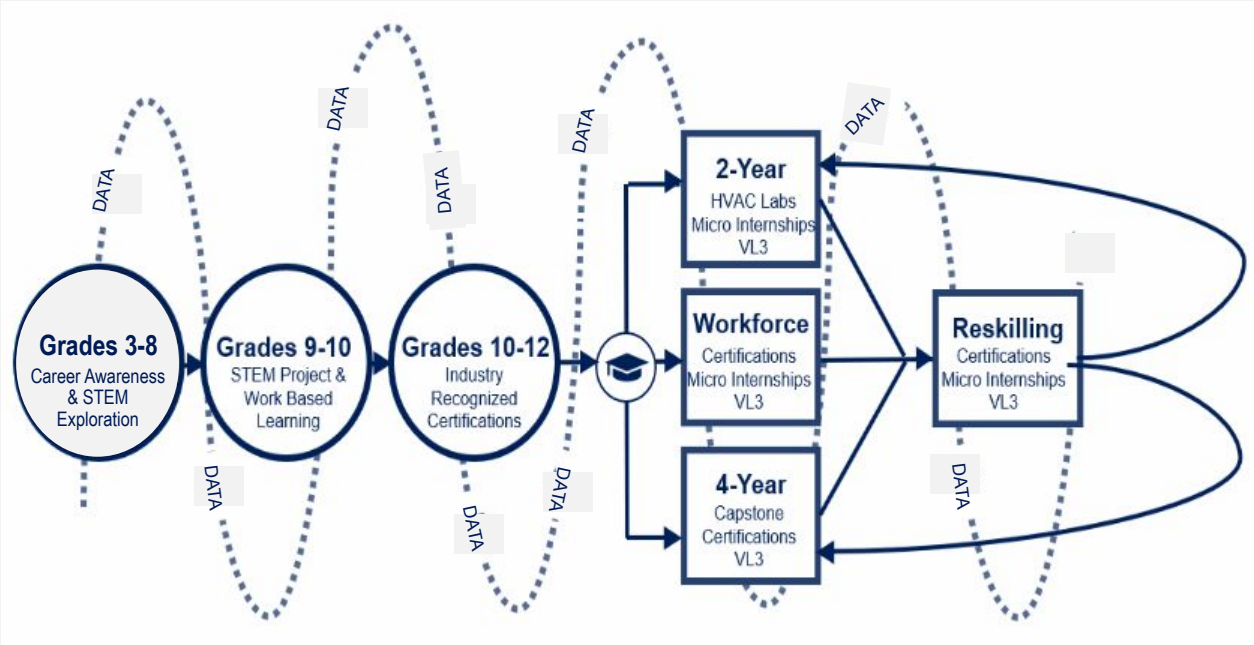
Blending Environmental & Social Pillars

Provide a Gateway to Opportunity



Data Analytics | Real-World Applications | Lifelong Learning

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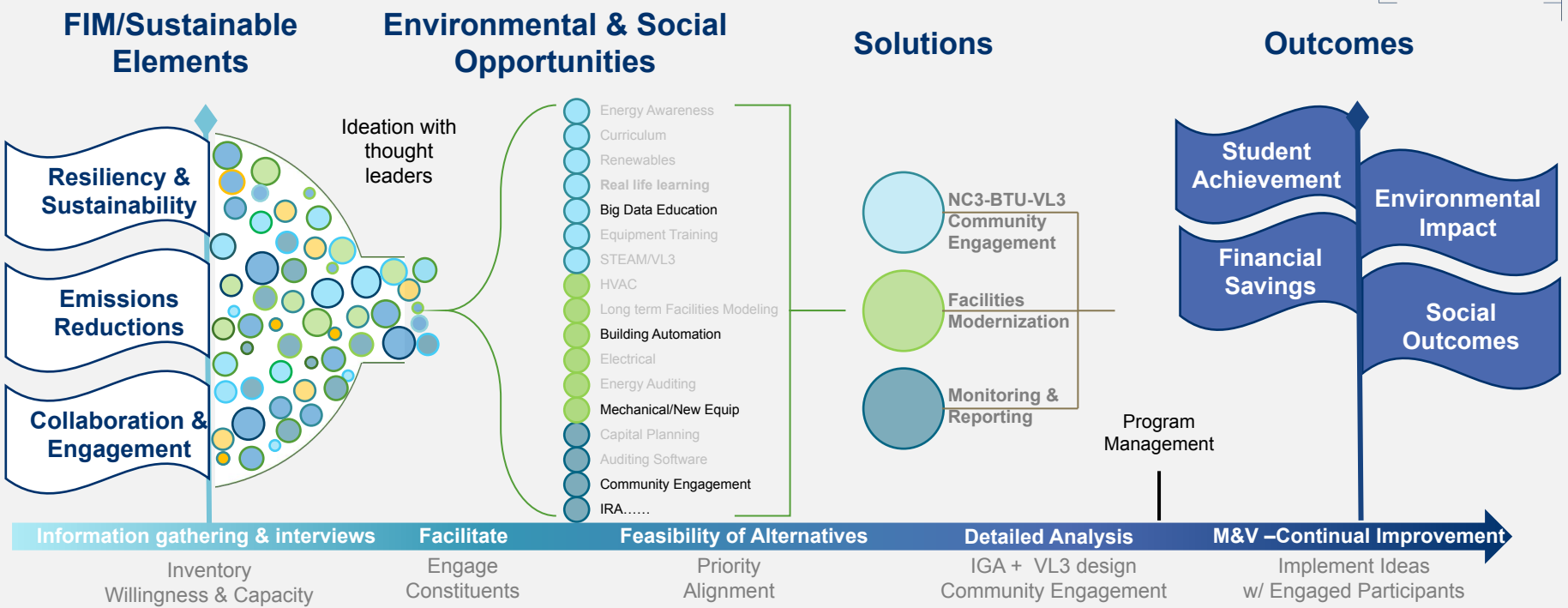
Driving Desired Outcomes



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Workforce Innovation

Ramsey County Inclusive Workforce Summit

KAYSC
Kitty Andersen Youth Science Center

Science Museum of Minnesota®

TRANE TECHNOLOGIES™

Agenda

- Introductions and Welcome
- TRANE Technologies/KAYSC relationship background
- Driving Collaborative Outcomes
- KAYSC Program Highlights
- Where to next?
- Q&A

Relationship Background

Joseph Adamji

Shared Interest

Innovation

Iteration

Authenticity

Leaning Into Possibilities

Fluid Communication

KAYSC Kitty Andersen Youth Science Center

Science Museum of Minnesota

TRANE TECHNOLOGIES

KAYSC Program Highlights

Thulani Jwacu

KAYSC
Kitty Andersen Youth Science Center

Science Museum of Minnesota

TRANE TECHNOLOGIES

Our Pathway

EXCITE: Design Team

STEM programming for K - 8 school students-after school & summer programming

APPLY: STEM-in-Action Crews

Paid leadership opportunities for high school students focusing on STEM

LEAD: Career & Community Connections

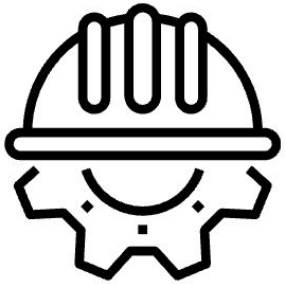
Work experience internships and PD within KAYSC, SMM & community partners

KAYSC
Kitty Andersen Youth Science Center

Program Structure

KAYSC Content Tracks

Biology
&
Public Health



Design
&
Engineering

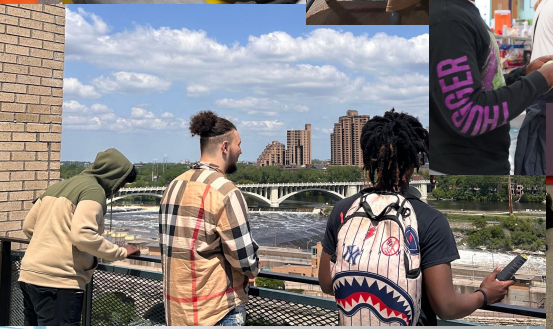
Education

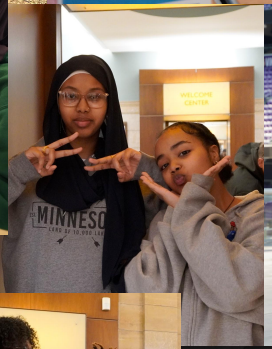
Environmental Justice
&
Sustainability

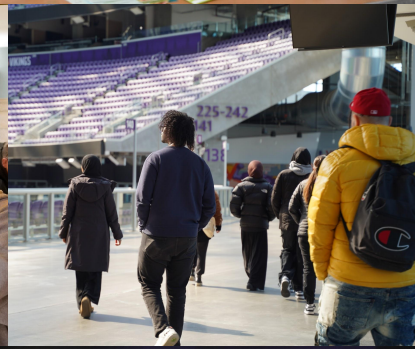
Media
&
Technology

MAKE
BEING

KAYSC
BIOLOGY &
PUBLIC
HEALTH
CREW







MINNESOTA VIKINGS
TEAM LOCKER ROOM

Youth Skill Development

Career Readiness & Workforce Development

- Career tours, talks & Skill development
  - Tour of Trane Headquarters - White Bear Lake
  - Career talks with TRANE BIPOC Professionals
  - Trainings & Certification
- Summer Work Based Learning
  - VEF, STEM ED, Freedom School
  - 6 week opportunities
- Industry certifications
  - NC3
  - Data Analytics
  - Decarbonization

Industry Certificates for youth

Goal:

Offer youth access to industry-standard credentials in data analytics.

Challenges:

- College-level data analytics curriculum
- Powerpoint format
- Complex exam (Tableau - Data Visualization)

Industry Certificates for youth

Goal: Make content more accessible

Adaptation:

- Develop a study guide
- Make it fun to increase likelihood of youth engaging with and recalling concepts
- **Kahoot!!** - Online game-based learning platform

Results:

- Tested study guide with KAYSC Young Adults - 5 out 7 completed certification
- Developed plan to implement with all high school participant - 2025

Engage Youth Development Staff

Goal:

Get Crew Managers excited about working with employer partners, integrate industry content in youth programming.

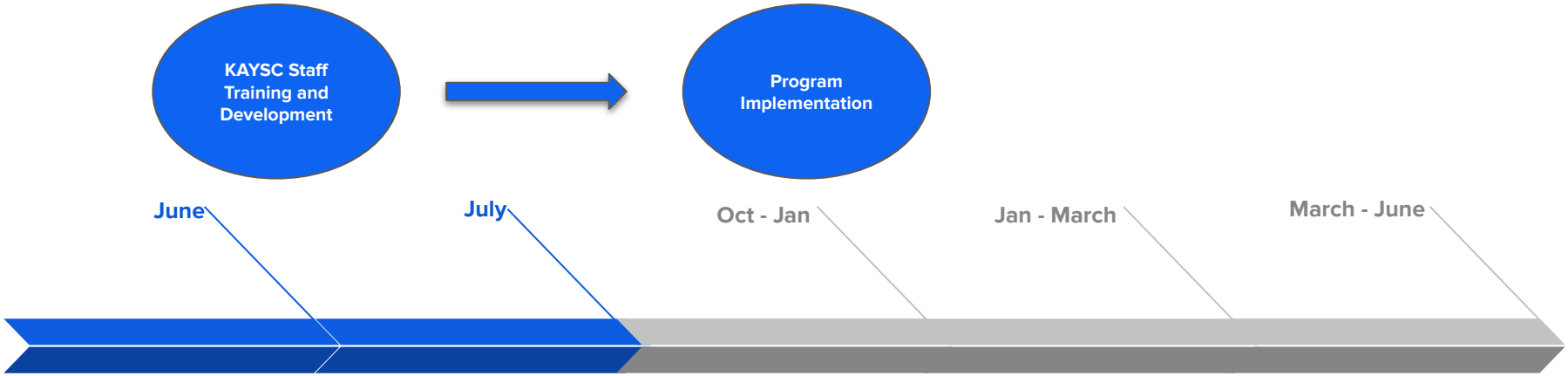
Challenges:

- Skepticism
- Lack of relationships
- Content integration framework

Results:

- Summer youth program staff workshop
- Framework for integrating relevant content into youth programming
- Direct contact with volunteers and guest presenters
- Growing willingness to interact with STEM professionals

KAYSC Summer Workshops



Celebration/Reflection/PD

Day 1:
- Celebrate & Reflect/Community Building

Day 2:
- CFESC/KAYSC Vision
- Workshop input

Day 3:
- Curriculum Development Professional Development

Workshops

Day 1:
- STEM J & Community Partners
- **Community issues**

Day 2:
- **Industry solutions to community issues**
- TRANE Tech
- Local STEM partners
- Post-secondary opportunities

Build community/buy-in

- Youth onboarding activities
- Framing in global movements
- Youth voice/choice activities
- Crew Identity artifacts

Social Justice in Community

- Gather data
- Map community assets and issues
- Research social justice issues (Youth Choice)
- Learn from presentations
- Attend/Support community events

STEM Learning

- Learn content specific skills
- Build vocabulary
- Fluency using tools
- Learn processes/procedures
- Skills marketplace (elective program)
- Community action projects

Youth Program Staff Workshop

Workshop Schedule

Time	Presenter	Details
Welcome 3pm	Thulani Jwacu KAYSC Director	Welcome, goals and instructions
STEM Issue 1: Food Security 3:05pm	Randy Newton	• What is the issue? • What is its extent? • What are the implications - who is affected • What STEM solutions are being employed?
STEM Issue 2: Climate Solutions/Sustainability 3:15pm	Pat Hamilton and Zack Main	• What is the issue? • What is its extent? • What are the implications - who is affected? • What STEM solutions are being employed?
STEM Issue 3: Green Energy 3:25pm	Grid Catalyst	• What is the issue? • What is its extent? • What are the implications - who is affected • What STEM solutions are being employed?
TRANSITION to Stations		
Food Security Station 3:35pm	TRANE Tech Refrigeration and HVAC Engineers	Incorporates: • STEM Knowledge: Concepts • STEM Terminology/Vocabulary: Glossary of terms? • STEM Tool/Equipment: Demo if possible - are there opportunities for interactive exposure for youth?

STEM Learning Partners

GRIDCATALYST

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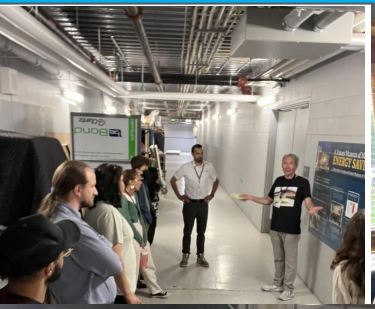
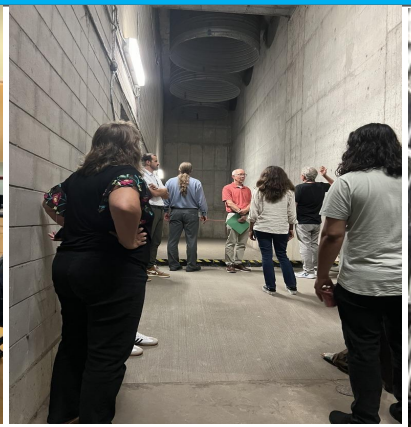
Youth Program Staff Workshop





KAISC
Kitty Andersen Youth Science Center

Science Museum of Minnesota

Looking Forward

KAYSC Goal	Tactics
STEM J and Youth Development training for employer partners	• Introduction to KAYSC's approach • Employer facing
Improve post-secondary education and employment outcomes	• Career prep resources • College prep resources • Navigational resources • Individual/group counseling • Credentialing resources
Fully leverage CNS resources (Funding, Volunteers, Credentialing, Curricula)	• Continue staff workshops • Increase employee engagement opportunities (Meaningful CSR) • Integrate industry content/knowledge/tools • Improve engagement with community based social justice orgs
Opportunities to deepen knowledge and skills, leverage employer resources	• Elective "courses" for KAYSC High School Youth • Engaging subject matter • Skill development - Industry tools and knowledge • Projects applied to community/societal challenges • Volunteer driven

Discussion / Q&A

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Survey / Thank You!

Thank You

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