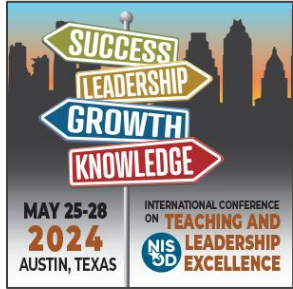




# USING THE ROBOT MODEL FOR AI WORKFORCE DEVELOPMENT.

## LESSONS FROM A GEORGIA CASE STUDY.

Amanda Roy and Alice Zimmerman



# WELCOME

- Who are we?
  - Technical College System of Georgia (TCSG)
  - Georgia Artificial Intelligence in Manufacturing (Georgia AIM)
- Why are we here?
  - Share about a TCSG's Georgia AIM project and lessons learned from one case study
- What we hope you will learn?
  - Application of the ROBOT Model
  - Best practices for replicating a manufacturing studio at your institution

- Alice Zimmerman, Director of Business Intelligence
- Dr. Amanda Roy, Ph.D., Georgia AIM Grant Evaluator





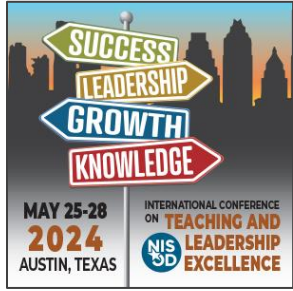
# BACKGROUND

- Georgia AIM Coalition
  - \$65M across multiple collaborating partners and projects
  - Grow talent and innovation in Artificial Intelligence (AI) across manufacturing sectors
- TCSG's Georgia AIM Project
  - Received \$7.8 million
  - Increase access to workforce development and technical training in AI manufacturing
  - Launch manufacturing studios and create rural innovation incubators across five Georgia technical colleges
- TCSG Georgia AIM Manufacturing Studios
  - Positioned in underserved communities (female, BIPOC, Veterans, rural)
  - Providing increased access to technical training for diverse and traditionally underrepresented populations
  - Training targeted to local industry needs

## Georgia AIM Manufacturing Studios:

- Poultry and food production
- Semiconductors
- AI and robotics

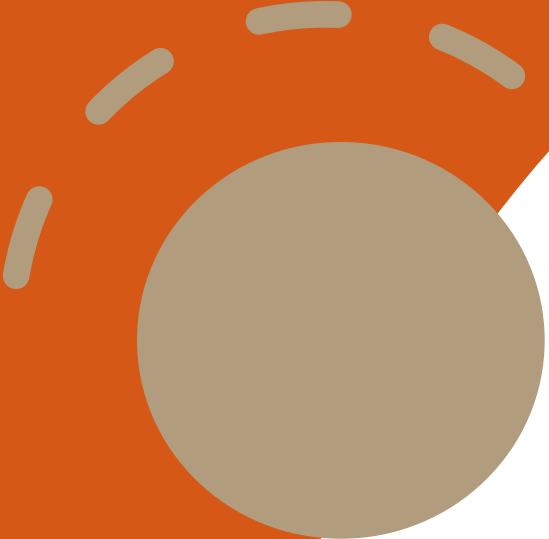




# CASE STUDY

- Central Georgia Technical College (CGTC)
  - Predominantly Black Institution (PBI) designation
  - 63% BIPOC
  - 61% female
  - Strong military/veteran population
- Veterans Education Career Transition Resource (VECTR) Center
  - Train returning service members and their families
  - One-stop-shop
  - Re-entry into postsecondary education and workforce
- AI-Enhanced Robotics Manufacturing Studio
  - Equipped studio and launched in October 2023
  - Earn non-credit certificates, Technical Certificates of Credit, and FANUC Certification
  - More than 200 enrolled, with 15 students in AI and advanced manufacturing:
    - Cyber-Physical Systems
    - Machine Vision Fundamentals
    - Robotics and AI in Manufacturing



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# EVALUATION FRAMEWORK AND FINDINGS



# EVALUATION FRAMEWORK

## Key Players/Points of Contact (POCs)

Pertinent staff who played an instrumental role in implementing Georgia AIM studios:

- Deans
- Vice Presidents
- Instructors
- Other Staff

## Framework

- Interviews
- Thematic Analysis
- Reports/Playbook



# R.O.B.O.T. DRIVEN IMPLEMENTATION

- Employ inclusive Recruitment strategies
- Develop Outreach strategies to engage business partners
- Build strong connections within the community to increase visibility for the program/placement opportunities for students
- Improve Outcomes of the program (enrollment, students graduating with jobs, etc.)
- Strengthen use of Technology for hands-on technical training to prepare students for careers in high demand fields



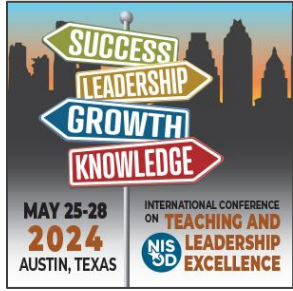


# IMPLEMENTATION

- Successful studio implementation was described via a collaborative approach with stakeholders from industry and system-wide partners.
  - Site visits
  - Round table discussions
  - Open communication

“...we had our round table event, [with] five or six different companies represented...we basically said, if you could design a curriculum...to meet the needs of your employees, what would it be?...[W]e collected all that feedback, and that's what we worked into the curriculum, ...got approved and are ready to launch...”





# IMPLEMENTATION- RECOMMENDATIONS

- Several recommendations were discussed. These were:
  - Design studio space to be adaptable to industry's evolving needs.
  - Allow one day a week/bi-weekly to facilitate training for economic development partners or K-12 students.
  - Design a realistic workplan and follow it, including:
    - Plan for at least a year to prepare for launch.
    - Have equipment back-up plans in place in case equipment is delayed.



# ENGAGEMENT, OUTREACH, AND PARTNERSHIPS

## Program engagement and outreach efforts:

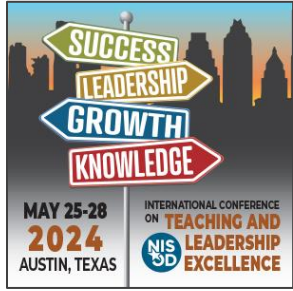
- Partnerships with other grant awardees
- Enrollment efforts across strategic populations (veterans, women, BIPOC, rural communities, etc.)
- System-wide and K-12 engagement
- Challenges associated with engagement (i.e., lack of female representation)
- How to best leverage partnerships to increase enrollment and visibility

“Probably the one weakness we have is just not having a lot of females that have signed up. I had nine, all guys, this first time. Looking at my roster for my upcoming one, I think that's going to shift some. So, it won't be a boys' only club...[T]his partnership with Fort Valley, thinking about their engaging with middle schoolers, we're gonna see a lot of emphasis on women in STEM coming from that, because the camp they're doing is for girls...”



# ENGAGEMENT, OUTREACH, AND PARTNERSHIPS- RECOMMENDATIONS

- Recommendations for future engagement and outreach consisted of:
  - Involving instructors in monthly meetings so they can seek advice from colleagues, workshop ideas, and continue strengthening relationships.
  - Leveraging the studio space to help support broader grant objectives in collaboration with other grant partners when applicable and possible.



# FUNDING/STAFF

- Purchasing delays, impacted by funding delays, impacted implementation timelines and studio set up.
- Additionally, restricted budgets limit the ability to hire adjunct faculty.

“There was definitely a delay in the funding being put in place. And so that made us antsy... because we were ready to purchase equipment in January—months before we were actually able to do so, and that did create a delay... Some of our even larger pieces of equipment for robots came in after the first cohort began... [T]hat was one of our biggest challenges, was, if you know, that funding had been placed a little bit earlier.”



# FUNDING/STAFF RECOMMENDATIONS

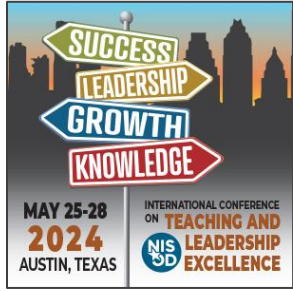
- POCs provided funding and staffing recommendations for future studios:
  - Have backup plans in case of equipment delays.
  - Have ample staff/willing students that can help implement backup plans (move equipment from one space to another).
  - Design or negotiate project budget with all program aspects in mind.



# SUSTAINABILITY

- Sustainability was discussed through experiencing
  - growth
  - support
  - lasting impact
  - continued collaboration
- The lasting impact of an AI-enhanced robotics manufacturing studio in Central Georgia fills a workforce/industry need and can help attract a new generation of students to the workforce.

“We as a college have been talking about this need for quite some time. And so, for us to have this opportunity to engage on the GA AIM grant and to have the funding available for us to stand up this studio and meet what we knew was industry needs...This is a game changer for us in terms of meeting industry needs and us as a college taking a step forward...So, I'm, I'm thrilled, it's been really incredible to be a part of this project and, and a part of the larger group through TCSG... and for the community too, I think it's going to be a valuable resource to attract new manufacturing, new companies to come in. Which is more jobs for our students.”

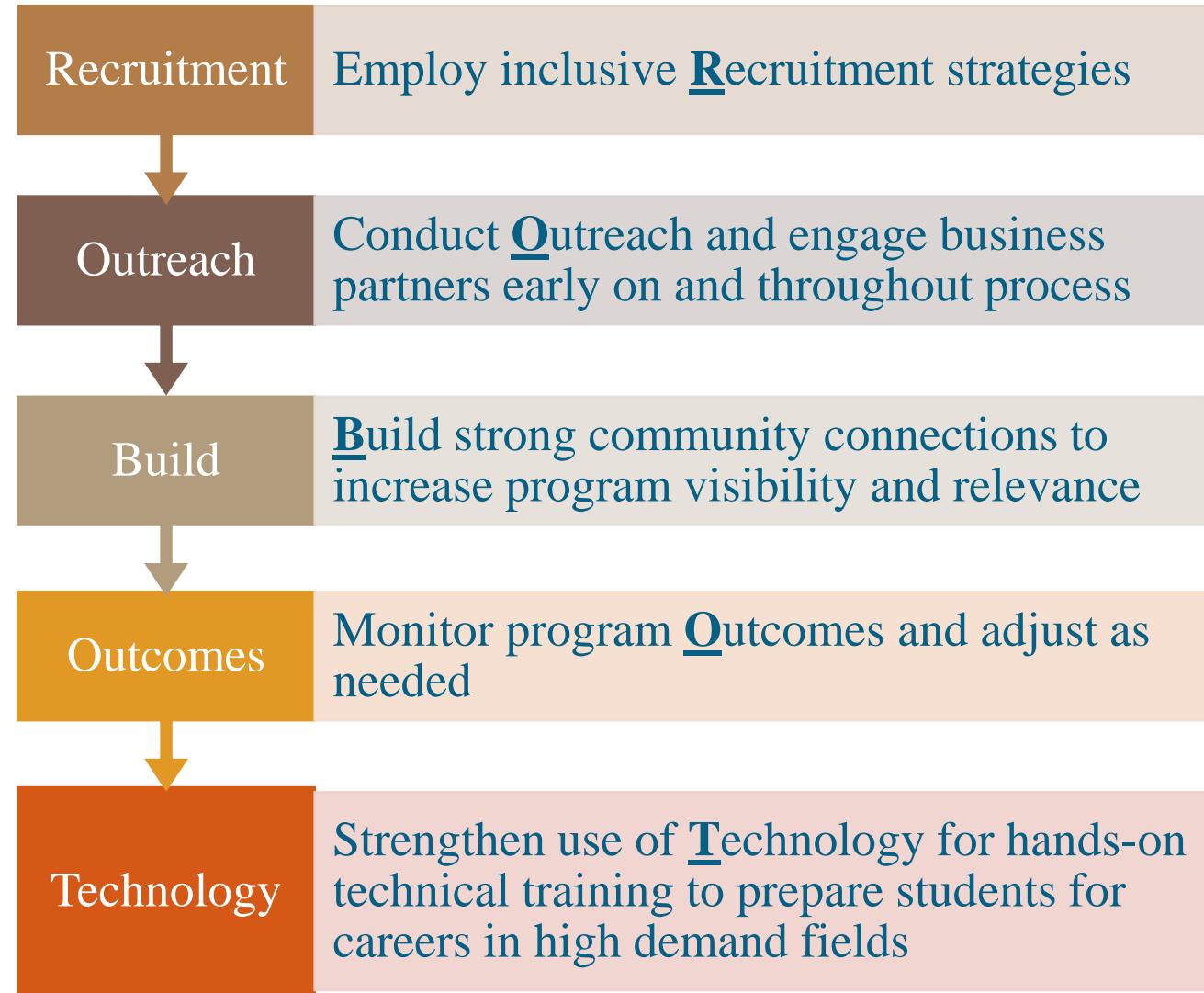


# SUSTAINABILITY RECOMMENDATIONS

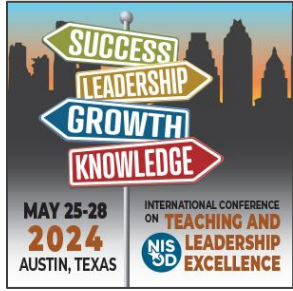
- POCs provided recommendations to further sustainability efforts for future studios. These were to:
  - Continue fostering collaborations amongst TCSG colleges (i.e., via meetings, site visits, workshops, conferences, etc.).
  - Continue fostering collaborations amongst other partners in the region both involved and not already involved on the grant.
  - Continue to look for funding mechanisms to support the project to ensure that more staff can be hired/equipment can be continually updated to keep up with trends in innovation.



# R.O.B.O.T. Model

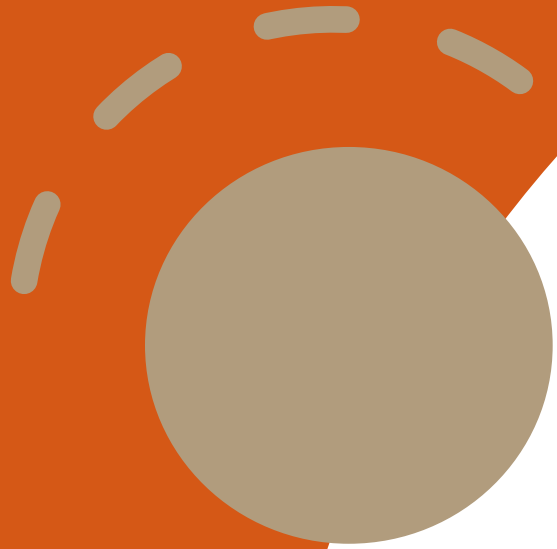






# R.O.B.O.T. AT CGTC

- **Recruit:** CGTC identified challenges with female recruitment and partnered with FVSU to tailor a youth camp to attract more women into manufacturing; including female representation on marketing materials (i.e., flyers, billboards, etc.).
- **Outreach:** CGTC recommended leveraging the studio space to support broader grant goals in collaboration with other grant partners where possible to continue supporting and building outreach efforts.
- **Build:** By leveraging the space and engaging stakeholders at every step along the way, CGTC has been able to build strong connections within the community to ensure that all graduates will have a place to land after TCC completion.
- **Outcomes:** Program outcomes trackable through data and defined metrics.
- **Technology:** Cutting edge technology introduces the Central Georgia community to automation and robotics, providing students/veterans the opportunity to enter the workforce with median salaries of ~\$60,000, increasing the economic prosperity of the area.

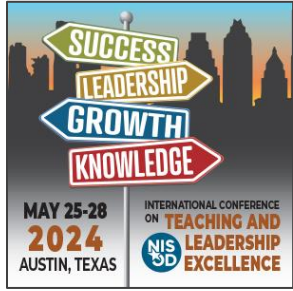


# BREAKOUT ACTIVITY



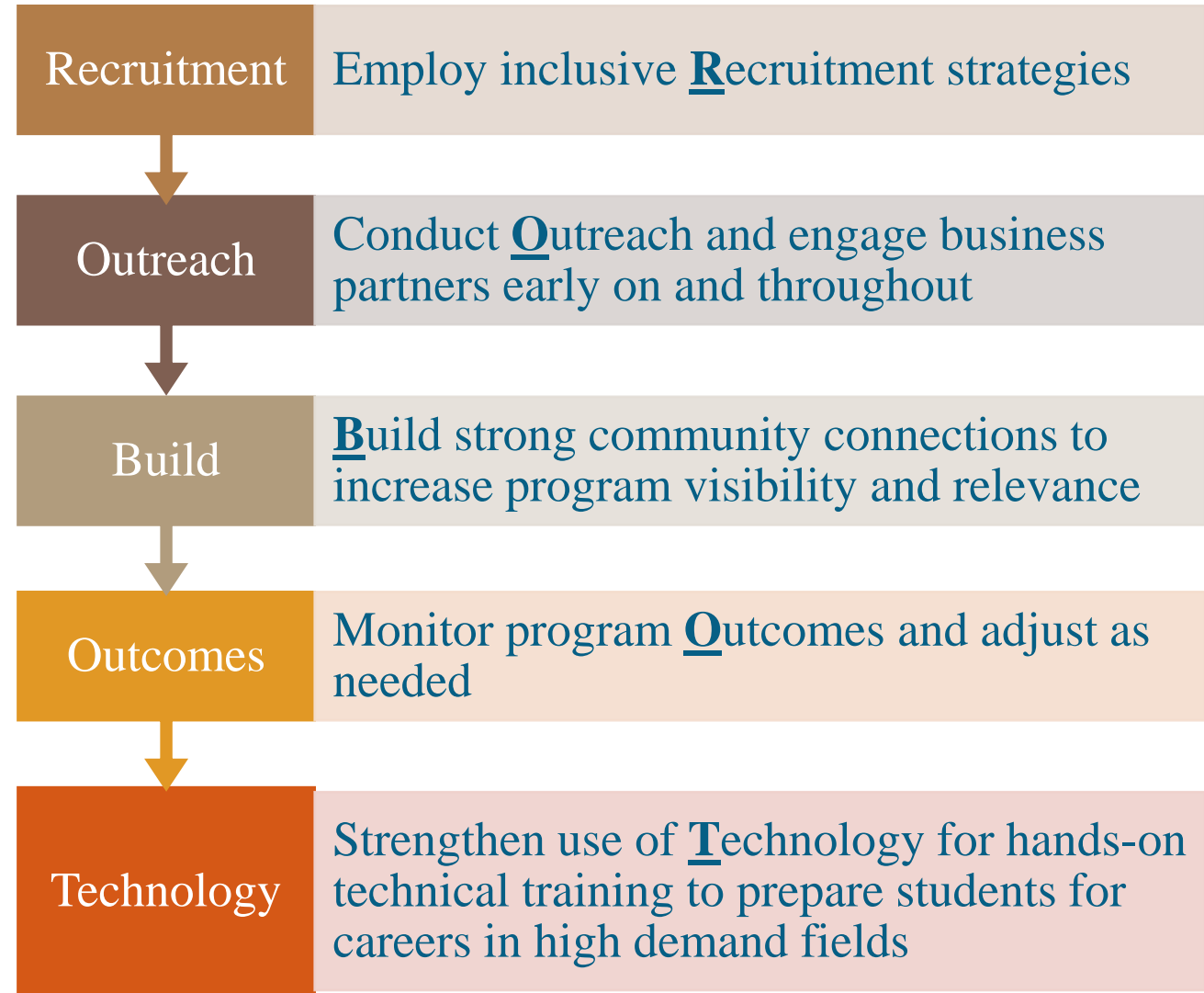
# R.O.B.O.T. EXERCISE

- Break into five groups
- Each group will address one of the five R.O.B.O.T. principles
- Discuss and write down three examples of how you might apply the R.O.B.O.T. principle at your college when implementing new AI manufacturing studios
- Report back to group



## R.O.B.O.T. Exercise

- Five groups
- Address one of the R.O.B.O.T. principles
- Give three examples of how you would apply the R.O.B.O.T. principle at your college when implementing new AI manufacturing studios
- Report back to group





# WRAP UP / REPORT BACK

- Recruitment:
- Outreach:
- Build:
- Outcomes:
- Technology:



# THANKS FOR JOINING US!

**Share your feedback!**

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*Click on “Session Feedback”*