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Messiah College
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THE COLLABORATORY FOR
STRATEGIC PARTNERSHIPS AND
APPLIED RESEARCH

One College Avenue Suite 3034
Mechanicsburg PA 17055

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DOKIMOI ERGATAI



STUDENT VOICES *Interviewed by Kira Adelman '19*

What does being an "approved worker" mean to you?



Autumn Bank '19

*Major: business administration
Project: Marketing*

"Doing your job to the best of your ability while honoring God. Someone who has integrity and is a good leader."

Addison Hurst '18

*Major: economic development with a business concentration
Project: Business Initiation Team*

"Being an approved worker means knowing that I am a part of something bigger. That I am accepted, loved and commissioned to give my all to God's kingdom."



Nile Lewis '19

*Major: biomedical engineering
Project: Wheels for the World*

"Using your talents and efforts to convey God's glory to others. Actively leading with the word of God through your words and actions, while following His lead."



Michael Pasti '17

*Major: electrical engineering
Project: STEAM*

"Once we become Christians, we begin to see God's work and creation in a new way. We were created to cultivate his creation. As an approved worker, I want to

make his creation as beautiful as possible, and make the STEAM education kit as excellent as possible."



Ted Sindabizera Ntwari '17

*Major: engineering
Project: VWOS*

"A worker freely given the privilege to join and participate in the transformation of lives."



Deborah Ting '17

*Major: marketing
Project: Marketing*

"It means to be able to build a personal relationship with Jesus and serve openly him openly without the purpose of gaining anything in return."

STAY CONNECTED: For regular updates and inside stories, follow us on these social media sites! We would love to hear your Collaboratory story.



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“Approved Workers” — II Timothy 2:15

DOKIMO I ERGATAI

SPRING 2017

FUTSAL FIELD FOR CUMBERLAND POINTE

By Hannah Beirsto '20



The neighborhood soccer team, Walaalos United. “Walaalos” is the Somali word meaning brothers.



This dirt field will be turned into the CP futsal court.

Cumberland Pointe is the only section 8 government subsidized housing

in Mechanicsburg, Pennsylvania. It is a community comprised mostly of Muslim refugees from Somalia, and also where Messiah alumnus Danny Thompson '12 has lived for the past three years. Employed by AROMA, Messiah's sports ministry, Thompson and his wife Lisa live and minister to this community through their shared love of soccer. During his time at Messiah, Thompson held a position on the soccer team, and still loves this sport. Soccer is the best way for them to connect to the Somali Muslim community; it is one similarity for them amongst so many differences. However, there remains one glaring issue: currently, no place exists to play soccer in Cumberland Pointe.

In 2013, Thompson prayed for the community and God gave him the vision to build a field in Cumberland Pointe. “Literally impossible, never gonna happen,” he says. “Biggest dream I could comprehend.”

For three years, it seemed that way, until Thompson met Rodney Green, the Collaboratory's program manager at the time, who told Thompson that his dream

could be a reality.

Collaboratory serviced AROMA in the project through developing construction drawings for the futsal field. Jacob Artuso '17 worked as an engineering team member.

Artuso describes futsal as a form of soccer that can be played on a court surface (more similar to a basketball court than a soccer field). There isn't enough room for a soccer field at Cumberland Pointe, but there could be space for a futsal court.

The biggest challenges of the project were the technical aspects. Geotechnical engineering problems, stone and water management issues and the uneven surface of the neighborhood presented unique challenges to the engineers.

Artuso says that it's a great opportunity for the Collaboratory to do a project unlike any the organization has done before. “Doing it locally is something different. AROMA has a great vision, and it's great for the team to be a part of it. Everyone's grateful to be a part of it.”

Thompson has similar views. “Both groups have the same vision: build God's kingdom. Aroma through sports,

Collaboratory through academics, just using their gifts in different ways to do it.”

Once built, Thompson believes that the futsal court will completely alter the atmosphere in Cumberland Pointe. “It's going to take a dead, negative space and turn it into something positive, bring life to the neighborhood. The kids all know about it, always ask me when it's going to happen. I tell them to be patient, but they're really excited.”

Thompson wonders what might have been if he'd dreamed even bigger. What he's taken away from it, and hopes others learn, is that what seems like an impossibility in our mind is totally possible for God. “Dream with God.”

INSIDE

- Word from the director
- Group updates: STEAM education creates new technology for underprivileged school
- Student voices



THE COLLABORATORY FOR
STRATEGIC PARTNERSHIPS AND
APPLIED RESEARCH

WORD FROM THE DIRECTOR

MISSION

The Collaboratory is a center at Messiah College for applied research and project-based learning, in partnership with client nonprofit organizations, businesses, governments and communities in our region and around the world. Areas of engagement include science, engineering, health, information technology, business and education. Our two-fold mission is:

- To foster justice, empower the poor, promote peace and care for the earth through applications of our academic and professional disciplines
- To increase the academic and professional abilities of participants, their vocational vision for lifelong servant-leadership and their courage to act on convictions

VISION

Increasing hope and transforming lives through education, collaboration, innovation and service.

IDENTITY

The Collaboratory is an organization of students, educators and professionals affiliated with Messiah College. We are Christians who aspire to obey the instructions of our Lord and Savior Jesus Christ, to love neighbors as ourselves and to share his Gospel. As God enables us to serve others today, we seek to grow as disciples of our Lord and Savior Jesus Christ, to serve as God's stewards over the resources of our academic disciplines and to bear witness to the good news of the Kingdom of God.

STUDENT STAFF

STUDENT DIRECTOR: Damaris Gehman

ASSISTANT STUDENT DIRECTOR: Jessica Kline

STUDENT ADMINISTRATIVE ASSISTANT: Sarah Bearsto

PROFESSIONAL STAFF:

DIRECTOR: Doug Flemmens

ENGINEERING PROJECT MANAGER: Dereck Plante

ADMINISTRATIVE ASSISTANT: Shannon Walker

STAY CONNECTED

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DOUG FLEMMENS, COLLABORATORY DIRECTOR



How does one boil down the current work of the Collaboratory into 300 words? Many of you know I like to start with 22 words from Ephesians 2:10:

“For we are God’s handiwork, created in Christ Jesus to do good works, which God prepared in advance for us to do.”


I admit, I can miss God’s handiwork in the lives of those around me as I go about my busy day. Even with my often myopic eyes, God has allowed me to “see anew” his work over the last few weeks.

I’ve seen dozens of students shine during their project presentations. While I know these events are not easy, I have heard many panelists testify about the improvements they are seeing in the teams and individuals. God is building **leaders**.

I’ve seen many teams wrestle with unforeseen changes in plans, delays, surprises — in short, life. Sometimes life challenges our commitments and makes us think about what is truly important. God is crafting **maturity**.

I’ve seen students tackle the hard questions about being a follower of Jesus — submission, service, fasting, among others. Moreover, I have seen these students worship God by taking steps of obedience, whether large or small. God is forming **faith**.

I’ve seen students experience cultures and interact with people who are facing challenges far beyond what most of us will ever know. They have walked through those experiences with compassion and grace. God is producing **perspective**.

This newsletter highlights just a few of our projects and students. Whether in Central America, Harrisburg, or elsewhere, the goal remains the same: to increase hope and transform lives. No matter the external location, more and more I realize that the transformation we seek starts very close to home. Three hundred words only skims the surface. 

COLLABORATORY SECTOR TAGS

The Collaboratory adopted a new branding style for the categorization of projects. The chart below serves to familiarize you with each of the different sector tags. You’ll notice the sector tags used throughout the newsletter; each tag indicates areas of academic disciplines applied to each project.



Advancement:
Promoting and enhancing Collaboratory operations



Economic Empowerment:
Fostering economic development



Infrastructure:
Developing structures to advance communities



Biomedical:
Innovating medical technologies



Education:
Empowering lives through academic engagement



Sustainability:
Caring for the earth



Communications Technology:
Designing systems to foster communication



Energy:
Implementing renewable energy technologies



Transportation:
Simplifying transportation to combat global complexity



Disability Resources:
Empowering persons with physical disabilities



Health:
Advancing healthy communities



Water:
Facilitating sustainable water solutions



STEAM EDUCATION CREATES NEW TECHNOLOGY FOR UNDERPRIVILEGED SCHOOLS

By Maddie Conley '20



Above: Students explore the robotics presented by the team. Above right: Moore shows a robotic device to a group of young students. Below: STEAM's first music module, under development.

The STEAM Education team takes hands-on learning to a new level with a robotics kit that teaches K-12 students abstract math, science and music concepts.

Dr. Michael Robinson, project manager and assistant professor of engineering, and Mayim Moore '17, student project leader and mechanical engineering major, hold a common passion about the tools that their team develops.

Robinson began mulling over the idea for the project when he saw several needs in primary and secondary classrooms. Students struggle to see connections between various disciplines and how some studies will benefit them outside the classroom. They grow unmotivated and disinterested in these subjects. Another challenge is schools in low-income areas often lack the resources to obtain STEAM learning tools to engage students in science, technology, engineering, arts and math.

"Talking to teachers, there was an interest in some sort of product that they could use for these various demonstrations in class," Robinson says. The STEAM Education team was tasked with creating a product to fill this need. "There's not much

out there that does what we are looking to do with this kit."

The team develops kits with several modules to give students a tactile way to learn. For example, they are creating an interactive light/sound display of the electromagnetic spectrum and a music tone-training module. The teaching tool aspect presents a feature that makes this kit different than other robotics kits. Where other kits focus on robotics and programming, the STEAM kit focuses on learning concepts from the classroom. "We are showing how subjects interrelate, and that's something unique about this project," says Moore.


One of the more progressed modules is a tone recognition tool. The module plays a tone and the user moves a slider to the tone that they heard. If they get it right, a celebratory jingle will play and if they do not, it will move the slider to the actual tone.

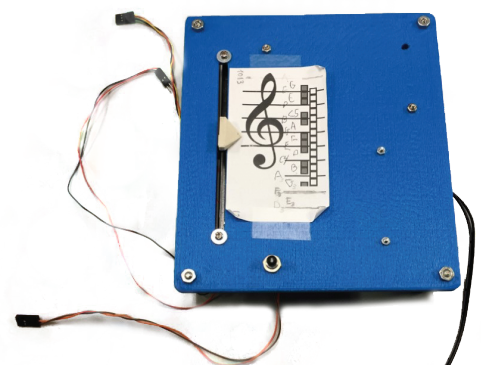
Interestingly enough, the team came in contact with Charles Lady, a man who previously attended Messiah College and now lives in Messiah Village, who made a similar module. STEAM has worked to advance his idea and reproduce it through

3-D printing technology.

Robinson estimates that the full kit will cost around \$50-\$150, less than half the cost of a comparable kit. "It's one thing you can buy that does a bunch of different things and it does that a little cheaper," says Robinson.

While this kit serves to make learning easier, STEAM intends not to do the work for the user. "We need thinkers," said Robinson. Memorizing and demonstrating should not make up education. "We are trying to get kids to think about how to solve problems," he says.

The technology and logistics of STEAM's project can be challenging, but the goal is clear. "Ultimately we want to make learning more accessible and fun, and we want to reach out to underprivileged school systems," says Moore. 



The Collaboratory could not continue to increase hope and transform lives without a broad team of sponsors.

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