

# 2018-2019 Annual Report



## FROM THE DIRECTOR

On a trail near where I live, there was a blank sign. The original message had faded away long ago. A sign that says nothing eventually becomes almost invisible. Recently, some creative soul, armed with a can of black spray paint, made it clear to all what the blank sign had been trying to say to us: “Think for yourself.”

It seems to me that this is part of what a college education is about—“to educate men and women toward maturity of intellect”—not so much to know the answers to the questions faculty and staff ask of the students, but rather for them to know how to think through the questions that are still in the future. Finding answers when the path isn’t clearly marked is an important skill to develop and is useful in tackling some of the tough problems presented to our Collaboratory students.

### Don’t just think about yourself

Intellectual challenge alone is not the target. Maturing of “character and Christian faith” is also the pursuit. Therefore, Collaboratory projects are often found in the midst of broken settings. These circumstances require not only use of mental powers, but also to give of our very selves in order to restore some of the flourishing that God intends for the people He created.

### Think beyond yourself

While this journey to maturity is personal, it is not individual. Preparing for “lives of service, leadership and reconciliation” implies that there is a major dose of “togetherness” on the journey. So we work with our community partners toward results—results that also build relationships.

On the following few pages you will see a glimpse of the good work God is doing through the Collaboratory. Thank you for your continued support of this work as we strive toward our vision to increase hope and transform lives through education, collaboration, innovation and service.



Doug Flemmens  
Director, The Collaboratory for Strategic Partnerships  
and Applied Research at Messiah College

## MISSION

The Collaboratory, at Messiah College, is a center 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 twofold 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.

## STAY CONNECTED

WEB: [messiah.edu/collaboratory](http://messiah.edu/collaboratory)

EMAIL: [collaboratory@messiah.edu](mailto:collaboratory@messiah.edu)

BLOG: [messiahcollaboratory.wordpress.com](http://messiahcollaboratory.wordpress.com)

[facebook.com/Collaboratory](https://facebook.com/Collaboratory)

[instagram.com/MCCollaboratory](https://instagram.com/MCCollaboratory)

[twitter.com/MCCollaboratory](https://twitter.com/MCCollaboratory)

## 2018-2019 COLLABORATORY LEADERS

### Doug Flemmens

Director

### Lily Gaudreau

Student Director

### Lori Zimmerman

Program Manager

### Kally Tan

Student Program  
Manager

### Dereck Plante

Engineering Project Manager

### Shannon Walker

Administrative Assistant

### Erin Brenneman

Assistant Student Director

### Mik Fenn

Student Administrative  
Assistant





**DISABILITY RESOURCES/BIOMEDICAL**

**• Cunningham Clubfoot Brace**

- This team continues to work on developing and validating a maintenance bracing treatment method for club foot developed by prosthetist and orthotist Jerald Cunningham.
- Many of the team members took their spring break to personally meet with Mr. Cunningham in Maine. They also traveled to CURE Kenya during the summer and were able to pilot test a pressure sensor force collection device as well as actively participate in clubfoot clinics and home visits.

**ENERGY**

**• Energy Monitoring and Management System (EMMS)**

- This team made great progress toward the continued development of their energy monitoring system, which is designed to allow organizations with limited power sources (such as solar) to manage the limited resource among multiple users while helping to educate those users about the impact of their power-consumption choices.
- At the end of the spring semester, the team built 27 systems. Six systems went to Matt Walsh to install at the Institut Missiologique du Sahel in Burkina Faso. The remainder of the systems were installed at Theological College of Zimbabwe during the team's summer site trip to Zimbabwe.



**EDUCATION**

**• Harrisburg Science Camps**

- This team faithfully prepared and delivered weekly after-school STEM (science, technology, engineering, math) material to 4th- and 5th-graders at Downey Elementary school. During the year, they conducted 16 sessions for approximately 13 students. They have sharpened their own teaching skills while inspiring their students to explore STEM topics and careers.



**INFRASTRUCTURE**

**• Land Development in Kenya**

- The Land Development team has partnered with Living Love Ministries, an orphanage in Kenya, to provide site development plans for much-needed athletic/play fields for the orphanage. They also designed a drip-irrigation system that will help Living Love extend their growing season throughout the dry season, moving closer to their goal of being self-sustaining in providing food for their nearly 30 children. In June, they traveled to Kenya along with the Solar PV team to install this system along with a solar water pump donated by Stanley Earth.



**WATER/HEALTH**

**• Sustainable Agriculture**

- The team marched forward with great success in creating a best practice prototype of an aquaponics system and began the growing process of several tomato plants using the nutrients from two tilapia.

**• Village Water Ozonation Systems (VWOS)**

- **Pakistan:** The team is finishing the design of an arsenic removal and disinfection system to meet the drinking water needs of 150 students and staff at the Full Gospel Assemblies Pakistan Bible College.
- **Nicaragua:** The VWOS project has initiated a partnership with Friends in Action and the Rama People in Nicaragua to plan a sustainable drinking water solution for the community living on Rama Kay Island. So far, well testing and water quality tests have been completed.
- **Mexico:** There is a continued partnership with Forward Edge in Oaxaca, Mexico, planning the installation of an Ozonation system at the Christian Family Center International church. This system will support the church's feeding program and other ministries.

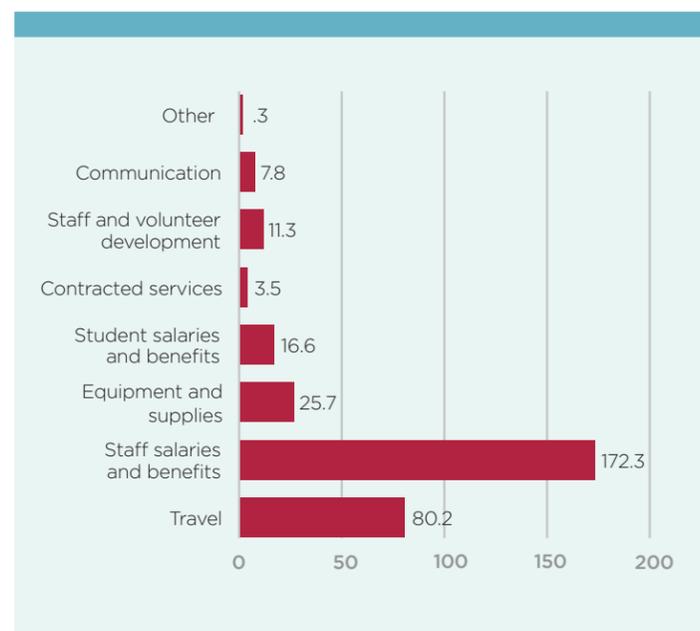


**TRANSPORTATION**

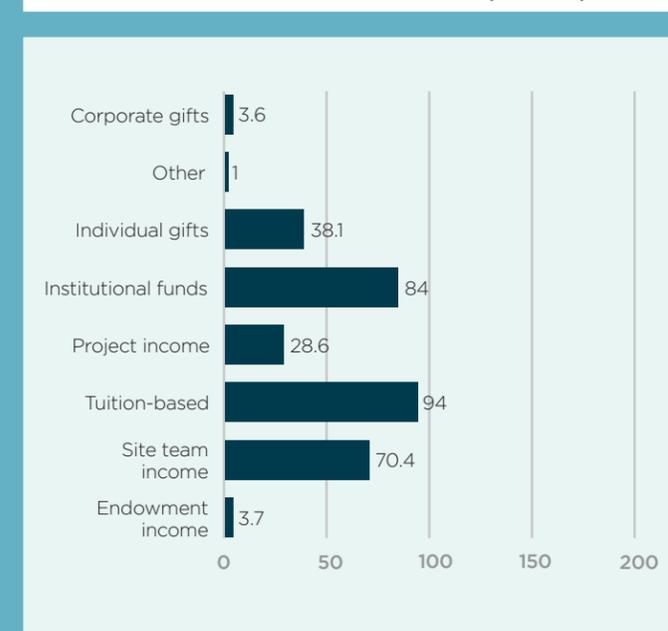
**• Basic Utility Vehicle - Firetruck**

- The project team provided a working prototype, design documents, user manual and manufacturing manual to their client, the Institute for Affordable Transportation.
- The BUV and prototype will be donated to a community as recommended by the client.

**TOTAL EXPENDITURE BREAKDOWN (1000s)**



**TOTAL REVENUE SOURCES (1000s)**



**Overall total expenditures: \$317,498**  
 Unachieved giving target: \$59,400  
 Target revenue: \$382,836

**Overall total revenue : \$323,436**  
 Spending reductions: \$47,400  
 Target spending: \$364,898

**THANK YOU TO OUR INVESTORS AND PARTNER ORGANIZATIONS**

**TRANSFORMATION INVESTORS**

*Invested regularly in the Collaboratory up to \$500 this year*  
 Bethany Blackwood  
 Michael & Rebecca Brown  
 Daniel Dourte  
 William & Emily Jones  
 David & Nancy Knight  
 Nathaniel & Jennifer Nichols  
 Timothy & Lisa Roesler  
 Earl & Elisabeth Swope  
 Paul & Kimberly Tucker  
 Leslie Weiland

**CORNERSTONE INVESTORS**

*Invested in the Collaboratory \$500 - \$999 this year*  
 Mel Brough  
 Curtis & Laura Edgin  
 Douglas & Joanne Flemmens  
 Stephen & Krista Frank  
 Kate Johnstone  
 Robert & Susan Kline  
 Nancy Lenhart-McLellan  
 Brittany Lighthall  
 Nathan & Naphtali Mitten  
 Gavin Stobie  
 Deborah Tepley & Luke Jackson

**MAJOR INVESTORS**

*Invested in the Collaboratory more than \$1000 this year*  
 Daniel & Karisa Barlow  
 Pat & Brenda Brown  
 Nathaniel & Jacqueline Diedrich  
 Keith & Carol Good  
 Glenn & Kelly Heisey  
 John & Nancy Howell  
 Elizabeth Imboden  
 John Meyer  
 Roger & Joann Sider  
 Clayton & Elizabeth Swartz  
 David & Ariela Vader  
 Gerald & Ruth Wolgemuth

**MAJOR FUNDING PROVIDED BY**

Brethren in Christ Foundation  
 D H Funk & Sons LLC  
 Dillsburg Brethren in Christ Church  
 Friends of TCZ  
 Gannett Fleming Inc.  
 Intel Corporation  
 Modjeski & Masters  
 World Vision Inc.

**ADDITIONAL CORPORATE FUNDING**

Association for Bridge and Construction Design  
 E & E Metal Fab, Inc.  
 Paulus Orchards  
 Presbyterian Church in America Foundation

**PARTNER ORGANIZATIONS**

Access Development/Water4  
 Aligned Works  
 Burkina's Promise  
 Jerald Cunningham  
 Cary Cupka  
 Centre for the Advancement of the Handicapped  
 CURE International  
 Engineering Ministries International (EMI)  
 Eric Shoemaker/Ability Prosthetics and Orthotics  
 Forward Edge/Trigo y Miel  
 Friends in Action  
 Full Gospel Assemblies  
 David Germeyer  
 GO Ed  
 HALO Trust  
 Harrisburg Public Schools  
 IEEE Smart Village  
 In Peace and Love  
 Institute of Affordable Transportation  
 Living Love Ministries  
 Macha Research Centre of Zambia  
 Office of Disability Services, Messiah College  
 Open Door Development/SIM  
 Paxton Ministries  
 Rider Musser Development  
 Rio Missions  
 Sight and Sound Theatres  
 Theological College of Zimbabwe  
 Water Mission  
 Wheels for the World/Joni and Friends  
 World Vision

**GIFTS IN KIND**

- Donated office and work space from Messiah College **\$105,000**
- Estimated student volunteer service value **\$62,081 (8,563 hours)\***
- Estimated professional advisor volunteer service value **\$196,000 (2,800 hours)**
- Estimated faculty support value **\$70,000**

**GRAND TOTAL: \$433,081**

\*Does not include hours spent by students earning course credit. Total student hours = 19,303.



THE COLLABORATORY FOR  
STRATEGIC PARTNERSHIPS AND  
APPLIED RESEARCH

One College Avenue Suite 3034  
Mechanicsburg PA 17055

Address Service Requested

DOKIMOI ERGATAI



## ABOUT US

### STUDENT MEMBERS PER SECTOR

Advancement	8
Biomedical	43
Communications tech	9
Disability resources	19
Economic empowerment	17
Education	6
Energy	30
Infrastructure	34
Sustainability	6
Transportation	13
Water	34
Other	8
<b>Total student members</b>	<b>227</b>

### COUNTRIES WHERE WE SERVE

Algeria	Mexico	United States
Burkina Faso	Nicaragua	Vanuatu
Ghana	Pakistan	Zambia
Kenya	Panama	Zimbabwe

### CONTACT US

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