



## Research at Ashesi University

Research is an integral component to an Ashesi education. Student and faculty research addresses Africa's most challenging issues and is guided by a desire for impact in scholars' fields of study, their communities, and across the continent. Ashesi Foundation raises support for the following research priorities:

### Investing in Faculty Development

Our faculty are breaking new ground in their fields. The Faculty Development and Research Fund invests in their professional development by sponsoring research, procurement of equipment and resources, participation in international conferences, and pursuit of higher education, including PhD acquisition. Supporting our faculty's professional development strengthens the academic and social experience of both faculty and students and ensures that Ashesi builds on its track record of excellence.

Senior Lecturer Sena Agyepong is currently researching the impact of the MASO Business Academy, a business incubator that trains youth interested in starting businesses that enhance the well-being of cocoa growing communities. "I look for research opportunities every day in my teaching and non-teaching activities," she says. "Having had the opportunity and privilege to design a number of Ashesi courses and programs, I've developed an interest in researching pedagogy and general teaching and training."

### Expanding Our Research Facilities

Thanks to the help of generous donors, Ashesi opened three new spaces in 2018 that are enabling students, faculty, and staff to pursue cutting-edge research.

1. The *Research & Learning Lab* is home to six science, technology, and engineering labs, as well as space for collaborative work.
2. The *Fab Lab* houses labs for new product design and fabrication along with a rooftop terrace for community engagement.
3. The *Professor Stephen Adei Studio for Research Excellence* is the central hub for faculty research. The studio has five pillars:

- Research and scholarship
- Identifying, applying for, receiving, and managing grants and other sponsored programs
- Teaching and learning
- Faculty innovation, service, and impact (including IP and consultancy)
- Quality assurance and accreditation



This Ashesi student research team presented their bioengineering technology at the world's premier synthetic biology competition.

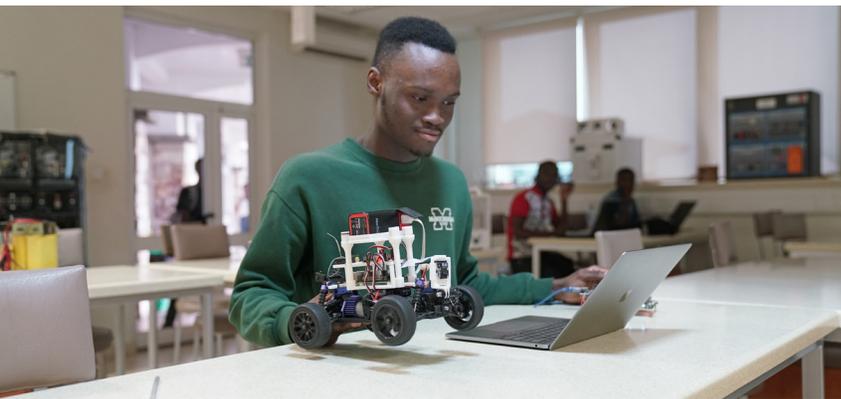


## Supporting Student Research

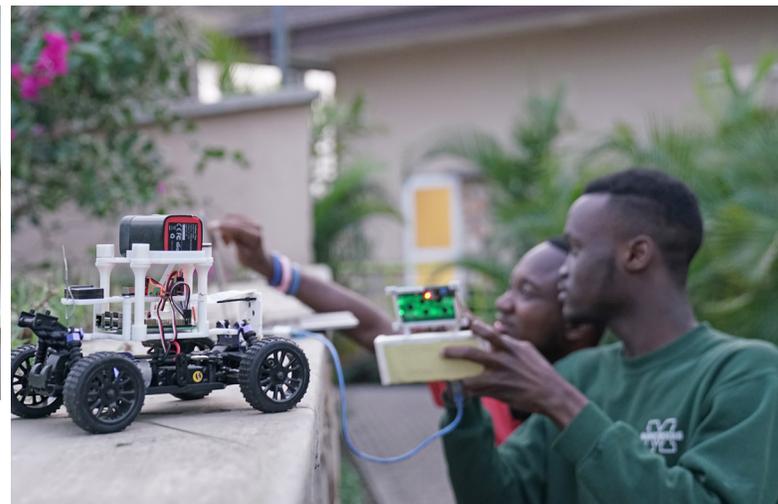
Throughout their four years at Ashesi, students are encouraged to pursue original research. This gives students an opportunity to tackle real-world problems, work side-by-side with their professors, and participate in international competitions. In 2017, a team of Ashesi students (pictured above) traveled to Boston for the world's premier synthetic biology competition. With the goal of providing a non-toxic alternative to traditional gold mining, the team successfully engineered an organism capable of extracting the precious metal from ore. These students comprised the first team to represent West Africa in the competition's history.

Many students also undertake research for their capstone projects, working individually or in teams. In addition to a written report, students make final oral presentations to their peers and faculty advisors. The focus of Benedict Quartey's '18 capstone was to make self-driving technologies accessible in Africa. Benedict designed a driverless platform, complete with a model car. "I developed modular hardware and software infrastructure," he says, "complete with data collection pipelines designed to allow African students and researchers to test their ideas and implement self-driving algorithms, using similar machine learning and control techniques as Google, Uber, Tesla and other leading tech and automotive companies."

The Ashesi Institutional Repository (AIR) ensures that scholarly work like Benedict's is preserved, indexed, and showcased for a global audience. Students who produce strong research products have the privilege of having their work published on AIR.



Benedict Quartey '18 designed a driverless platform, complete with a model car, as part of his research-focused capstone.



## Welcoming Visiting Lecturers in Computer Science and Engineering

In the 2019-2020 academic year, Ashesi welcomed its first *Archer Cornfield Fellows in Computer Science and Engineering*. This year-long fellowship provides selected Fellows with the opportunity to combine research and teaching during a unique residency at our campus in Berekuso. Fellows work alongside Ashesi's dedicated faculty team to guide and inspire Africa's next generation of innovators. Our inaugural fellows come from Harvard University, the Massachusetts Institute of Technology (MIT), and the University of Michigan.

## Promoting Faculty Publishing

Ashesi encourages faculty and staff to share their research by publishing books and academic journal articles. These publications reflect the breadth of expertise and interests of Ashesi's community members. Here are a few recent examples:



### Migration Aspirations of University Students in Ghana

Lecturer of Humanities and Social Sciences Kajsa Hallberg Adu completed her PhD at the University of Ghana while working at Ashesi. Her dissertation, titled *On a Course to Migrate? Migration Aspirations Among University Students in Ghana*, breaks new ground in the literature, suggesting that individuals with less-academic credentials have a stronger aspiration to migrate than highly educated individuals. To better understand the phenomenon of student migration originating from the Global South, Adu argues that a more holistic approach is needed, inclusive of historical, social, and political contexts.

### Climate Change Adaption

Engineering Lecturer Kenobi Morris has an outstanding publication record of over 30 peer-reviewed publications. His ongoing research includes climate change adaptation and the impact of urbanization on the climate and humans. In his recently published article in *Geoscience Frontiers*, Moris analyzes the effect of urbanization on the local climate and air quality in Kuala Lumpur, Malaysia during its calm inter-monsoon season.



### Student Outcomes in Cross-Cultural Programs

Given that many college students cannot study abroad due to financial, familial, or other barriers, Millicent Adjei, Ashesi's Director of Diversity and International Programs, researched student learning outcomes from domestic service-learning programs as compared to international programs. Her findings, published in the *International Journal of Research on Service Learning and Community Engagement*, suggest that locally-based opportunities can be just as effective in developing student competencies as international experiences, so long as they are intentionally experiential and contain cross-cultural elements.

### Social Psychology of Entrepreneurial Behavior

Associate Professor of Business Administration Gordon Kwesi Adomdza's research is at the intersection of social psychology and entrepreneurship. In a recent article published in *Small Business Economics*, he details the effects of entrepreneurs' cognitive biases on their business success through funding.



## Advancing the UN Sustainable Development Goals

A 2019 Times Higher Education global ranking of universities lists Ashesi University among the world's best, based on impact and contribution to the UN Sustainable Development Goals (SDGs). Ashesi's main strengths are in contributing to Quality Education (Goal 4), Gender Equality (Goal 5), Reducing Inequalities (Goal 10), and Partnerships for the Goals (Goal 17). Ashesi community members' research is broad and relevant to many of the SDGs, including:

### Goal 1: Ending Poverty in All Forms Everywhere

Along with UNICEF, Economics Professor Dr. Edgar Cooke researches the state and impact of poverty in Ghana and assesses the relationships between growth, poverty reduction, and inequality. His research confirms that considerable gains have been achieved in reducing poverty over the past two decades in Ghana but that rising inequality increasingly threatens progress.



### Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

In 2018, a student team won the \$100,000 WEGE Prize for their sustainable agricultural intervention. Using web-based technology and biotechnology, the team's solution involves transforming bagasse, the main by-product of sugarcane farming, into bio-compost fertilizer, increasing its accessibility to the larger sugarcane market for rural farmers and helping them achieve greater yields and ultimately overcome poverty.

### Goal 3: Ensure healthy lives and promote well-being for all, at all ages

Senior Lecturer of Engineering Dr. Elena Rosca researches how to use biologically inspired concepts to optimize cancer therapies and diagnosis in Africa by developing cost-effective, non-invasive, and efficient therapies and sensors. Dr. Rosca also advises Ashesi students in their cancer research.



## JOIN US

To learn more about research at Ashesi University and how you can make a difference by contributing to the Faculty Development and Research Fund, please contact us at 206.545.6988 or [foundation@ashesi.org](mailto:foundation@ashesi.org).

**Ashesi University in Ghana · Ethical Leadership and Innovative Thinking for a New Africa**

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