

ANNUAL REPORT 2022 · 2023























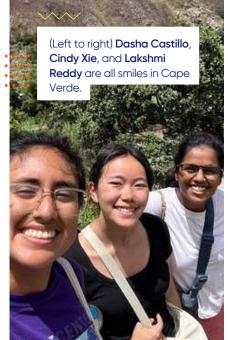








TABLE OF CONTENTS

·/·/

Year in Review	04
Year in Numbers	05
Global Teaching Labs in Africa	07
Student Internship Spotlight	09
MIT-Africa Seed Funds	14
Events and Initiatives Spotlight	15
Acknowledgements	17
MIT-Africa Team	18
Appendix with Complete Placement Data	19



YEAR IN REVIEW

For the first time since 2019, this year marked a return to our activities without COVID restrictions. Overall, we placed 81 students into different opportunities, doubling placements from the previous year. The level of commitment and expertise our students brought to their work was a joy to witness.



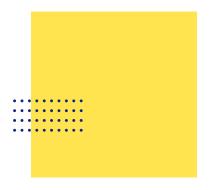
OR. MAI HASSAN
Faculty Director

The MIT-Africa Global Teaching Labs program this year was our largest ever, offering STEM education opportunities for **300 young learners** across the African continent. We continued to focus on our work with African Mathematics Olympiad Teams, but also offered labs in computer science and artificial intelligence, robotics, mechanical engineering, sustainability, and design.

MIT-Africa's crucial relationship with the Office of Vice Provost for International Activities continued this year as we jointly launched the first ever MIT-Africa Seed Fund, which provided funding for MIT faculty to engage research and teaching opportunities with colleagues in 5 different countries.

With the Vice Provost's support, we also continued to place research interns at African universities in 7 different countries, solidifying joint knowledge production as a cornerstone feature of MIT's engagements in Africa.

As always, we are grateful to our supporters and collaborators that make everything at MIT-Africa possible, and especially our anonymous supporter who inspires us with their generosity year after year.



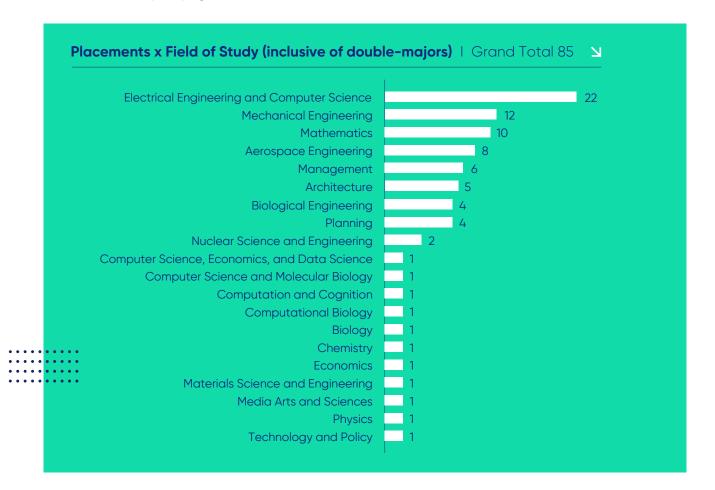


YEAR IN NUMBERS

Placements x Country | Grand Total 81

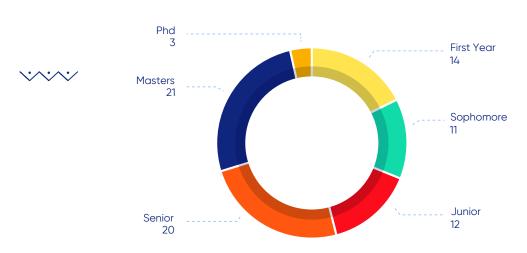


Dual Country GTL program with South Africa

















GLOBAL TEACHING LARS

VVVV





Global Teaching Labs, or GTL, provides MIT students with the opportunity to "learn by teaching" while simultaneously introducing high school students abroad to MIT's signature lab-based approach to learning. Running every January for 2 to 4 weeks, GTL participants travel as teams to African countries to teach science, technology, engineering, and math (STEM) courses to high school students. During IAP of 2023, we ran the following labs:

Country	City	Theme/Focus	No. MIT Students	Partner	Approx. No. of Partner Students
Ghana	Accra	Competition Mathematics	3	MISE Foundation	20
Ivory Coast	Abidjan	Competition Mathematics	2	Société Mathématique de Côte d'Ivoire	10
Morocco	Casablanca & Rabat	Robotics	3	International Education Group	50
	Agadir & Ben Guerir	Various Engineering, Design	4	Connect Institute	17
South Africa & Botswana	Johannesburg & Gaborone	Robotics and Al	9	Independent Schools Association of Southern Africa	150
South Africa	Gqeberha	Engineering Renewable Energy	5	Masinyusane	20
	Stellenbosch	Competition Mathematics	3	University of Stellenbosch	10
Tunisia	Tunis	Competition Mathematics	4	Mediterranean Institute of Mathematical Sciences	20



All the teachers and learners during the **Al and Robotics GTL** in Johannesburg, South Africa.





INTERNSHIP SPOTLIGHT





CINNY XIF BS in Planning (Course 11) Class of 2024



Host: Jean Piaget University with Prof. Raffaella Gozzelino Location: Praia, Cape Verde

This summer I had the opportunity to conduct research at Jean Piaget University in Praia, Cabo Verde on climate change and human health.

I worked with a team of several collaborators to design and conduct a community survey on these topics.

Outside of work, I enjoyed the opportunity to form connections with locals and explore Cape Verdean food, music, and Through wide-ranging the discussions I had inside and outside of work, I learned so much about politics and culture in different countries. The global perspective I gained through this experience will be valuable as I move forward in my academic and professional journey.

Cindy was also selected as MISTI Identity X Ambassador, sharing her experiences and perspectives through the lens of identity. Her blogposts can be read here.



ANKITA DEVASIA

BS in Business Analytics (Course 15), **Class of 2023**



Host: Data Prophet Location: Cape Town, South Africa

I worked on the **Data Science team** and was staffed on a project for a tire manufacturer. Over the first three months of my internship,

I implemented transfer learning algorithms that helped generalize my client's tire productions, reducing emissions and MISTI lowerina scrap rates. is a life-changing experience.

Being able to fully embrace the city you travel to will undoubtedly shape you into a more resourceful and aware person. Although I had a lot of uncertainty about my future post-graduation, my experience in Cape Town has helped inform my career goals and enable me to leave my comfort zone in ways I couldn't have imagined.







LEONARD VIRBI

MAS in Media Arts and Sciences (Course MAS) Class of 2024



Host: African Center for Technology Studies as part of the Government Innovation Research Fellowship

Location: Nairobi, Kenya

I interviewed governance actors in the Kenya Commission on Revenue Allocation (CRA) about the Kenya Revenue Devolution Model, specifically focusing on the third revenue sharing basis. It was revealing both interpersonally and professionally.

I benefited from peer mentorship and improved my interpersonal skills. I learned about my passion for solving governance innovation problems in developing countries.





JOSH SWEET BS in Finance (Course 15). Class of 2024



Host: Knife Capital Location: Cape Town, South Africa

I worked as an investment analyst. I did a variety of projects, using researching different aspects of an industry (competitors, potential exits, etc.).

I also worked on a project with the other interns that gave a general view of some of the strong and weak points in the portfolio. Speaking as a participant, I will say that this is one of the coolest experiences I have ever had the joy of participating in and I could not have done it without serious financial support.

I can safely speak for all MISTI participants when I say that we appreciate every cent that is donated to the program.







BS in Biological Engineering (Course 20), Class of 2025



Host: Medical Research Council Unit-The Gambia at the London School of **Hygiene & Tropical Medicine**

Location: Banjul, The Gambia

the Nutrition worked in department with a focus on epigenetic impacts of nutrition. The team I worked with is interested in exploring environmentally sensitive areas of the epigenome to inform medical interventions and understand malnutrition in early life affects health outcomes throughout life.

I was always interested in global health, but this experience has really strengthened my passion for a career in research that seeks to increase representation and impact for people in the "Global South."

It was really important to see first-hand the kind of challenges of research in low-resource settings and is something I would like to work through in my career.



NATALIE PETROSSIAN

MBA (Course 15). Class of 2023

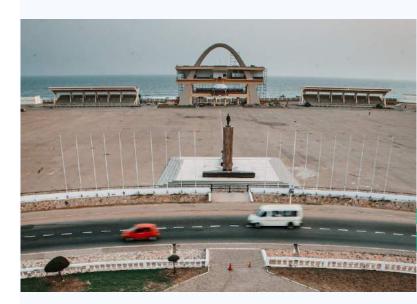


Host: Yemaachi Biotechnology Location: Accra, Ghana

It was an amazing experience. Biotech is supposed to be inclusive as the whole point of the industry is to develop medicines to advance human health.

And yet, medicine is inherently divisive due to a severe lack of diversity in patient representation and in genetic information for research and drug discovery.

I'm so lucky that I got to have a small part in the solution to this challenge.









HYUN SU PRICE

BS in Artificial Intelligence and Decision Making (Course 6). Class of 2026



Host: Aerobotics Location: Cape Town, South Africa

I worked to develop and implement terrain following for the drones they use. Essentially, creating software that allows the drones to follow the changes in the ground elevation as it flies.

Programs like MISTI are incredible as they open up global opportunities for anyone, regardless of their financial situation.

It's also just amazing to be able to go, live, and work in a whole new country.





JACOUELINE BAIDOO

PhD Candidate in Materials Science and Engineering (Course 3)



Host: Sanergy Collaborative Location: Nairobi,

Kenya

I spent the summer with the Saneray Collaborative exploring the feasibility of making biochar to add to their product line. Through it, I got on the ground insight into some of the parts that make waste moving valorization tick and how developing cities navigate the challenge of supporting urbanization and growth without falling into the structural pitfalls that take us further away from reaching global sustainable development goals. It was incredible to see local leaders devising and revising the new blueprints for how we consider materials at their end-of-life, and getting to see it in person inspired so many ideas on how I can incorporate this in my research in ways I hadn't even considered through literature alone. Beyond thesis work, I also enjoyed seeing the African continent from a new perspective and learning more of what's unique about my own West African heritage through cultural similarities and differences with people who look the same but have been shaped by different histories.



>>>>>



ASHAR FAROOQ

BS in Computer Science and Engineering (Course 6) Class of 2023



Host: **JUliza**Location: Cape Town,
South Africa

I did 3 separate large tasks: 1) I worked on creating new machine learning models of different architectures to detect the language of an audio by using spectrograms, 2) I worked on writing

scripts to take PDF formats of interviews and converting them to CSV/XML to Subtitles formats, and 3) I worked on creating a basic test for fine tuning a large language model. The PDF work is directly being used by the startup in their project to preserve a local language. The basic large language model test is being worked on to determine feasibility.

It is so lovely to have these opportunities to experience things beyond one's comfort zone without having to worry as much about finances and logistics, thus the opportunities are extremely valuable.



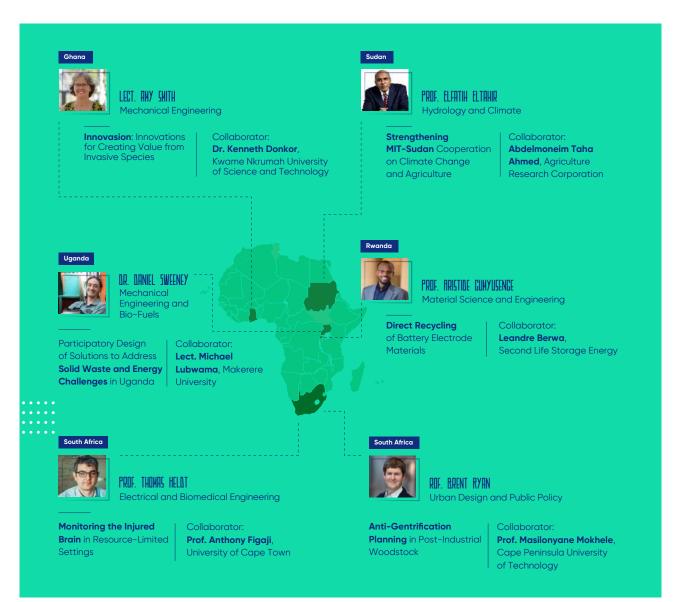


MIT-RFRICA SEED FUNDS

In 2022, MIT-Africa partnered with the **Office of the Vice Provost for International Activities** to launch MIT's first Africa focused research seed fund. The investment from Vice Provost Richard Lester sent a clear message that MIT is seeking research collaborators in Africa's knowledge centers, and in so doing, advances scholarship bi-directionally.

The response from the MIT community was incredible – MIT-Africa received 14 applications and awarded six grants covering five different countries for a total of over \$170,000 in awarded funds in 2022 cycle.

The six awardees were:



HIT-FERICA PROGRAM

EVENTS AND INITIATIVES SPOTLIGHT

Hosting Cape Verdean President, Hon. José **Maria Neves**

In April 2023, MIT had the honor of hosting President Neves for a public conversation on E-Governance in Africa, an area in which Cape Verde, and President Neves, has provided exemplary leadership. The event was featured as part of MIT's ongoing **Center for International Studies x True** Africa University lecture series. The MIT News story about his visit is available here.

Several months later, in June 2023, MIT students, MIT-Africa Managing Director and program advisers returned the favor and visited President Neves at his office in Praia, Cape Verde.





(Left to right) Lakshmi Reddy, Cindy Xie, Prof. Raffaela Gozzelino (JPU), President Neves, Dasha Castillo, Ari Jacobovits, and Prof. Joao Resende (Bentley University).



·/·//

Bridging Research and Innovation (BRAIN) Program with Open Startup International.

What began as an experimental program in 2020 to train Tunisian PhD holders in entrepreneurship, has evolved into a model for supporting deep tech entrepreneurship and research commercialization in low- and middle-income countries. Spearheaded by Executive MBA student Phil Rigueur as part of Dr. Phil Budden's IDEAL Lab course, Mr. Rigueur assembled a group of 7 impressive EMBA classmates to deliver a business training course for 20 aspiring Tunisian entrepreneurs in March of 2023.



Phil Rigueuer leading a session in Tunis, Tunisia as part of the BRAIN program.

At MIT, this program was launched by MIT-Africa in 2020 and continued with the support the Legatum Center and the Sloan EMBA Program.

Government Innovation Research Fellowship.

In partnership with MIT GOV/LAB, and the Priscilla King Gray Public Service Center, several MISTI programs launched this first of its kind fellowship to document public sector innovation success stories across the "Global South." In the Africa region, three graduate students were selected – one for Cape Verde, and two for Kenya – as fellows. As a fellow, students researched and co-developed case studies that can be used by bureaucrats, civil society organizations, academics, and other innovation actors to



Deepika Raman (second from left) and Leonard Vibbi (third from left) pictured with ACTS Executive Director Dr. Tom Ogada (left) and other members of the ACTS leadership team.

strengthen democratic governance transparency, responsiveness and accountability in the "Global South." **An MIT News story** about this initiative is available **here**.





Our work would not be possible without the support of these great organizations and people:















































































ACKNOWLEDGEHENTS

At MIT

Prof. Richard Lester, Vice Provost of International Activities Elizabeth Dupuy, Global MIT April Julich Perez, Center for International Studies John Congdon, Center for International

Studies

Robert Chambers, Center for

International Studies

Amanda Soh, Center for International Studies

Isabelle Bitman, Center for International Studies

Prof. Evan Lieberman, Center for International Studies Griselda Gomez, Center for International Studies

Prof. Michel Goemans, Mathematics
Prof. Yufei Zhao, Mathematics
Andree Lee Dixon, Mathematics

Chris "Petey" Peterson, Admissions Stu Schmill, Admissions

Dr. Phil Budden, Sloan

Dina Sherif, Sloan

Luis Barros, Sloan

Megan Hinkley, Resource Development

Jennifer Butler, Resource Development

Brenda Richard, Resource Development

Joost Bonsen, Media Lab

Prof. Wesley Harris, Aero Astro

Carlos Centeno, GOV LAB Seong Park, GOV LAB

Members of the MIT Africa Business

Members of the MIT African Students Association

Alumni and Friends Around the World

Adjoa Poku ('06)

Araba Lamousé-Smith ('00)

Ato Ulzen-Appiah ('06)

Darrell Swanson ('09)

David Ogutu ('15)

Diego Guerrero Cardenas ('16)

Emily Young ('18)

Guillaume Amblard ('87, '89)

Hassan Kane ('17)

Jose Esparza ('19)

Martin Mbaya ('00)

Ojonimi Ocholi

Patricia Lubwama ('09)

Sam Epee-Bounya ('03)

Shaheer Hussam

Victor Mallet ('06)

Ziad Oueslati ('90)

Brendan J. Swords, Wellington

Management

Lebogang Montjane, ISASA

Dr. Alexandra Epee-Bounya, BCH

Jeremy Naidoo, St. Johns College

Rod McDonald, St. Johns College

Prof. João Resende, Bentley University

Prof. Raffaella Gozzelino, Jian Piaget

University

Prof. Salome Maswime, University of

Cape Town

Dr. Houda Ghozzi, OSI

Yesmine Mansar, OSI

Mini Kouame, MassPRIM

Jim McKeown, Masinyusane

Zama Zulu, Masinyusane

Dr. Jean-Philippe Bakassa, SMCI

Amadou Sanankoua, OnPoint Africa

Joel Dogoe, MISE Foundation

Tebogo George, Maru-a-Pula

Dr. Archana Patel, Zambia Teaching

Hospital

Prof. Masilo Mokhele, CPUT

Prof. Ulrich Paquet, AIMS

Dr. Kofi BimpongBota

Grant Bridgeman, Uliza

MIT-RFRICA TEAM



OR. HAI HASSAN

Associate Professor of Political Science

Faculty Director, MIT-Africa



HR. ARI JACOBOVITS

MIT-Africa Managing
Director

MIT Center for International Studies

RPPENDIX - ALL PLACEMENTS

VVVV

Name	Course	Level	Host	City	Country	Туре
Adan Abu Naaj Elnag	Electrical Engineering and Computer Science	1	Uliza	Cape Town	South Africa	Private Sector
Alaina Kolli	Electrical Engineering and Computer Science	1	Data Prophet	Cape Town	South Africa	Private Sector
Alayo Oloko	Mechanical Engineering	2	IEG Education	Casablanca	Morocco	GTL
Alex Quach	Electrical Engineering and Computer Science	4	ISASA		South Africa and Botswana	GTL
Alex Weiler	Mathematics	4	MISE Foundation	Accra	Ghana	GTL
Ally Moir	Management	М	Renewvia	Nairobi	Kenya	Private Sector
Ankita Devasia	Electrical Engineering and Computer Science	4	Data Prophet	Cape Town	South Africa	Private Sector
Anna Duncan	Mechanical Engineering	2	Connect Institute	Agadir	Morocco	GTL
Ashar Farooq	Computer Science, Economics, and Data Science	4	Uliza	Cape Town	South Africa	Private Sector
Ben Lammers	Aerospace Engineering	1	Calestous Juma Legacy Found.	Bunyala	Kenya	Nonproft/NGO
Beth Tesfaye	Planning	М	IUGET	Duoala	Cameroon	Academia/Research Institute
Bolurin Adepipe	Architecture	M	African Center for Tech. Studies	Nairobi	Kenya	Academia/Research Institute
Brooke Bensche	Aerospace Engineering	4	ISASA		South Africa and Botswana	GTL
Celina Pasiecznik	Aerospace Engineering	М	SMCI	Abidjan	Ivory Coast	GTL
Charmaine Lee	Management	М	ISASA		South Africa and Botswana	GTL
Christian Studebaker	Architecture	М	IUGET	Duoala	Cameroon	Academia/Research Institute
Cindy Xie	Planning	3	Jean Piaget University	Praia	Cape Verde	Academia/Research Institute
Courage Kpodo	Architecture	M	Uni. Dar Es Salaam Msanzi Meat	Dar es Salaam	Tanzania	Academia/Research Institute
Daniel Antov	Biological Engineering	2		Cape Town	South Africa	Private Sector
Dasha Castillo	Electrical Engineering and Computer Science	4	Fundacao Smart Cities	Praia	Cape Verde	Private Sector
David Parkhurst	Architecture	М	IUGET	Duoala	Cameroon	Academia/Research Institute
Deepika Raman	Technology and Policy	M	African Center for Tech. Studies Medine	Nairobi	Kenya	Academia/Research Institute
Diane Li	Mechanical Engineering	4		Medine	Mauritius	Private Sector
Dila Ozberkman	Architecture	2	SAOTA	Cape Town	South Africa	Private Sector
Eduardo Maristany	Leaders of Global Operations	М	EcoBodaa	Nairobi	Kenya	Private Sector
Elaine Wang	Electrical Engineering and Computer Science	1	City of Cape Town	Cape Town	South Africa	Public Sector/IO
Eunice Aissi	Mechanical Engineering	PhD	Catalyst Energy	Cape Town	South Africa	Private Sector
Evgenia Artemova	Mathematics with Computer Science	3	MIMS	Tunis	Tunisia	GTL
Gustavo Ramirez	Computation and Cognition	3	ISASA		South Africa and Botswana	GTL
Holden Mui	Mathematics	2	MIMS	Tunis	Tunisia	GTL
Hyun Su Price	Mathematics with Computer Science	1	Aerobotics	Cape Town	South Africa	Private Sector
Isabella Gandara	Biological Engineering	2	MRC Unit, LSHTM	Banjul	The Gambia	Academia/Research Institute
Isabella Quan	Mathematics with Computer Science	1	MISE Foundation	Accra	Ghana	GTL
Jacqueline Baidoo	Materials Science and Engineering	PhD	Sanergy	Nairobi	Kenya	Private Sector
Jared Boyer	Aerospace Engineering	4	IEG Education	Casablanca	Morocco	GTL
Joel Tan	Mathematics with Computer Science	1	MISE Foundation	Accra	Ghana	GTL
Josh Sweet	Management	3	Knife Capital	Cape Town	South Africa	Private Sector
Joshua Masuda	Electrical Engineering and Computer Science, Business Analytics	3	Masinyusane	Gqeberha	South Africa	GTL
Julia Pasiecznik	Aerospace Engineering	М	SMCI	Abidjan	Ivory Coast	GTL
Kaelyn Dunnell	Nuclear Science and Engineering	2	Masinyusane	Gqeberha	South Africa	GTL
Katherine Ellison	Economics	2	MIMS	Tunis	Tunisia	GTL
Katherine Xiong	Electrical Engineering and Computer Science	М	Connect Institute	Agadir	Morocco	GTL
Katie Kempff	Aerospace Engineering	1	Aerobotics	Cape Town	South Africa	Private Sector
Kenneth Oranga	Mechanical Engineering	1	Medine	Medine	Mauritius	Private Sector
Kristen Palmer	Electrical Engineering and Computer Science	4	ISASA		South Africa and Botswana	GTL
Lakshmi Gangamreddypalli	Planning	М	NOSi	Praia	Cape Verde	Public Sector/IO
Leonard Vibbi	Media Arts and Sciences	М	African Center for Tech. Studies	Nairobi	Kenya	Academia/Research Institute
Lesley Lambaric	Electrical Engineering and Computer Science	1	Oze	Accra	Ghana	Private Sector
Lilly Edwards	Computer Science and Molecular Biology	4	Uni. Zambia Hospital	Chipata	Zambia	Academia/Research Institute
Maanasa Kotha	Electrical Engineering and Computer Science	4	Medine	Medine	Mauritius	Private Sector
Maanasi Limaye	Biological Engineering	1	Uni. Cape Town	Cape Town	South Africa	Academia/Research Institute
Masarah Ahmedhussain	Electrical Engineering and Computer Science	3	Sanergy	Nairobi	Kenya	Private Sector
Maxwell Onyango	Electrical Engineering and Computer Science	1	Calestous Juma Legacy Found.	Bunyala	Kenya	Nonproft/NGO
Minji Kim	Planning	М	UN Habitat	Nairobi	Kenya	Public Sector/IO
Naomi Kirimi	Electrical Engineering and Computer Science	4	MIMS	Tunis	Tunisia	GTL
Natalie Petrossian	Management	M	Yemaachi	Accra	Ghana	Private Sector
Omar Dahleh	Electrical Engineering and Computer Science	3	ISASA		South Africa and Botswana	GTL
Peter Miedaner	Chemistry	PhD	Connect Institute	Agadir	Morocco	GTL
Reed Robinson	Biological Engineering	4	Uni. Cape Town	Cape Town	South Africa	Academia/Research Institute
Renee Leatherman	Management	M	mDoc	Accra	Ghana	Private Sector
Rose Bialek	Mathematics	4	MycoHAB	Windhoek	Namibia	Private Sector
Sabrina Hare	Mechanical Engineering	4	Response Innovation Lab	Nairobi	Kenya	Nonproft/NGO
Sandy Jean-Charles	Electrical Engineering and Computer Science	М	Formula D	Cape Town	South Africa	Private Sector
Serena An	Mathematics	1	Uni. Stellenbosch	Cape Town	South Africa	GTL
Seth Fine	Mathematics, Electrical Engineering and Computer Science	4	Uni. Stellenbosch	Cape Town	South Africa	GTL
Shaida Nishat	Biology	4	Uni. Zambia Hospital	Chipata	Zambia	Academia/Research Institute
Shanti Mickens	Electrical Engineering and Computer Science	3	ISASA		South Africa and Botswana	GTL
Shealy Callahan	Mechanical Engineering	1	MycoHAB	Windhoek	Namibia	Private Sector
Shreya Pandit	Electrical Engineering and Computer Science	М	AIMS	Cape Town	South Africa	Academia/Research Institute
Sienna Williams	Aerospace Engineering	4	Uni. Cape Town	Cape Town	South Africa	Academia/Research Institute
Sophie Longawa	Mechanical Engineering	3	Connect Institute	Agadir	Morocco	GTL
Subhash Kantamneni	Physics, Electrical Engineering and Computer Science	3	ISASA		South Africa and Botswana	GTL
Sydney Dell	Computational Biology	3	IEG Education	Casablanca	Morocco	GTL
Sylas Horowitz	Mechanical Engineering	4	Masinyusane	Gqeberha	South Africa	GTL
Theo St. Francis	Aerospace Engineering	4	Masinyusane	Gqeberha	South Africa	GTL
Tiffany Louie	Electrical Engineering and Computer Science	3	ISASA		South Africa and Botswana	GTL
Wilhem Hector	Mechanical Engineering	2	Masinyusane	Gqeberha	South Africa	GTL
Yilinn Yang	Electrical Engineering and Computer Science	М	Slum Dwellers International	Cape Town	South Africa	Nonproft/NGO
Yuka Machino	Mathematics	2	Uni. Stellenbosch	Cape Town	South Africa	GTL
Zhixing Chen	Mechanical Engineering	2	Moving Health	Accra	Ghana	Nonproft/NGO
Zoe Fisher	Nuclear Science and Engineering	М	Medine	Medine	Mauritius	Private Sector













Supporting the MIT-Africa Program

Support for our work comes in all shapes sizes, but no matter how big or how small, it's always meaningful. Types of support often include:

All contributions should be directed to MIT-AFRICA
Program, MISTI - Account #3892550



Learn more **misti.mit.edu**



- Hosting an MIT student intern(s) at your Africa-based company, research lab, school, or other type of organization.
- Attending program-organized events online or in-person.
- Connecting with students while they are in-country (ideally, when you are there too) and facilitating their integration into local life.
- Someoting with students before they depart to a country in which you are familiar to offer advice on cultural nuances, in-country activities, or in-country contacts.
- Sharing this report with anyone that may be interested in learning about our work.
- Making a financial or in-kind (relevant to those hosting students) contribution to the program. There are various way to give to the program, which are detailed here or by scanning here:s.