

# Queengineers



CHOICES,  
HOPES &  
FEARS

CAREERS

# LETTERS FROM THE



## Martha Wakoli

I'm often asked when exactly I knew and decided I wanted to become an engineer. On days, when I'm not feeling very imaginative, I provide the clichéd response, "Engineering chose me." On days when I'm inspired, I tell the slightly longer version of my story.

My dad often fixed things at home when I was growing up and he nurtured my curiosity by encouraging me to work with him on repair projects. Second, I had an aptitude for English, Math and Physics but also had fantastic teachers both in primary and secondary school. In fact, in high school both my Mathematics and Physics teachers were women. I think this subconsciously helped to reinforce the notion that women too can excel at sciences. Third, my family is very supportive of each other's choices. As the last child, I was lucky enough to have a variety of perspectives before settling on a career path.

Growing up I wanted to be a writer, musician, teacher and engineer. Yes, all 4, with the same passion and intensity.

Fortunately, I did find a way to be each of those things at some point in my adult life. I'm extremely grateful for a support system that allowed me to choose unorthodox routes and cheered me on even when they didn't quite understand my varied and seemingly unrelated interests.

Dr. Chanda Prescod-Weinstein, the 63rd Black Woman in American History with a Physics PhD, aptly captures the same sentiments in this very insightful article: *I do think that the attitude in the physics community can be, "Well, if you're doing something else with your time, it clearly shows that you're not committed, and that you're not a genius—like Einstein-level genius—because Einstein just worked really hard and thought about things." But in fact Einstein was a polymath. He was interested in a lot of things. So I've been working on allowing myself to be interested in the many things that I am interested in, and not feel guilty about it. I do think the way the academic job market works—it discourages people from being whole, and that's a major problem."*

My suggestion for the young girls reading this would be to honestly answer these questions: "Is this what I care about and am I any good at it?" This will allow you to make a career choice you can excel at. To quote Howard Thurman, *"Don't ask yourself what the world needs. Ask yourself what makes you come alive and then go do that. Because what the world needs is people who have come alive."*

My recommendation for us all would be to never be afraid to change or reinvent yourself. As my own mother has taught me by her incredible multi-faceted career journey, "You shouldn't aim to be anything you want to be. You should be EVERYTHING you want to be." In the words of Tyece Wilkins, Author, *Twenties Unscripted* "You are allowed many lives in this lifetime. More than one career. More than one path. More than one moment." Welcome to Issue 2! Enjoy the read!!

# THE EDITORS

## Marian Muthui



As a kid, I would tinker with anything that I could get my hands on. My mum would be horror-stricken whenever she found me on the sitting room floor, screwdriver in hand with disassembled parts of the television strewn across the floor. At that time, it all seemed like mischief but in retrospect, I was actually cultivating a natural curiosity to learn how things worked.

It took me many years to figure out how to translate this interest into a viable professional career. Later in form 3, my class teacher gave us an assignment to create a graphic poster of our career ambitions. The project really pushed me to reflect on the career that I truly wanted. After talking to friends and carrying out research, I finally decided on Mechanical Engineering because I loved Physics and at that time, my dream was to one-day work in Germany designing cars. Therefore, my poster was filled with cut out pictures of different cars like Mercedes and Bentley.

From primary up to secondary, I never really knew what I wanted to do and I used to be very hard on myself about it. Watching my friends being so confident in their choices made me feel pressured and concerned as to why I couldn't make a decision. I'm sure many young people experience this at one point or the other and what I have come to realize is that this feeling of uncertainty and dread is completely normal.

Deciding on a career is not the be-all and end-all of life. One is not condemned to what career path they decide on in high school. Some people stick to their choices while others change it later in life. Either choice is totally okay.

It's crucial not to let the opinions of others heavily influence your decision. It's also important to let your passion and interests guide you. Yes, I know, it's easier said than done, especially when you feel pressured by teachers and parents. Trust me, with time, you will figure it out.

Happy Reading!

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# Institute of Engineers of Ke



## INSTITUTION OF ENGINEERS OF KENYA (IEK) THEME: POSITIONING WOMEN ENGINEERS FOR LEADERSHIP

Written by Engineer Margaret Ogai

***"Women belong in all places where decisions are being made... It shouldn't be that women are the exception." Ruth Bader Ginsburg.***

On 1st April 2017, the Institution of Engineers of Kenya Women Engineer Chapter (IEK WEC) held a successful workshop which was graced by the PS Gender, Ms. Zeinab Hussein.

The workshop was inspired by the need to change the story on low representation by women in the engineering field. The event started at 9:00 am with introductions, and presentations from various speakers. The Principal Secretary for Gender Affairs, Mrs. Zeinab Hussein gave the keynote speech on behalf of the Cabinet Secretary and responded to some of the queries raised. The event was attended by approximately 70 women engineers from various disciplines including 13 corporate engineers.

Eng. Rosemary highlighted the process of registration and challenged those who have not yet registered as either Professional or Graduate engineers to submit in their papers. She stressed on the need to be compliant with the process. She concluded by urging all participants to involve God in their careers.

"Be the best. It's the only market that's not crowded." These sentiments by George Whalin were the focus of Mr. Peter Ndungu's presentation. He highlighted the need to discover the purpose of our lives in order to serve humanity noting that we should not define our lives by externalities (jobs, possessions etc). Further he offered guidance on how to build emotional intelligence.



## ny (IEK)- Women's Chapter



Eng. Njeri Mburu began by highlighting the successes that Kiambu County has achieved under her leadership as a County Executive. Her team which comprises of 250 people has been keen on building efficiency (good design, proper supervision) and this has seen prices of implementing projects reduce substantially from Kshs 5million to Kshs 2million. She has held on to the notion of continuous improvement, hence upon completion of any project her team always does an evaluation to learn from successes and failures.

She highlighted that Kiambu County has several facilities to promote women including Biashara Fund (targeting women groups), Bursary fund (targeting vulnerable groups where Kshs 310million disbursed to date). In addition, a total of 700 water tanks have been bought to ease water supply in the county. In her department, 4 out of 16 engineers are women and she offers internship opportunities targeting women. On renewable energy, the County is partnering with UNHABITAT to train women to make lanterns while the county is also investing in street-lighting to enhance security.

Eng. Emelda, the IEK WEC Chair, began by illustrating a recent success at her workspace under her leadership where she successfully negotiated to secure a piece of land at Nairobi Hospital for substation setup. This guided her discussion where she highlighted that a time has come where women are no longer flower girls but they can also guide decisions. She highlighted the challenges women in engineering are facing in their positions and her hope for the future. She then welcomed the PS Gender, Mrs Zeinab Hussein to deliver her speech.

CS Zeinab started by appreciating the role the WEC leadership has played in starting the forum for women in IEK. She expressed the apologies for CS Public Service, Youth and Gender affairs for not being able to attend and proceeded to read her speech.



The key pointers highlighted in the speech include:

- She noted that the Conference comes at an opportune time when the Government is taking decisive steps to increase the number of women in leadership positions. She stated that women bring on board diversity and richness and quoted findings from a study undertaken by McKinsey which found USD 28trillion increase in GDP attributed to gender diversity!
- She applauded Women Engineers for pursuing careers in a field which is male dominated especially noting the demands of engineering careers and the multiple role women play as mothers and nurturers.
- She urged WEC to come up with workable strategies for consideration by the Ministry on how to engender the profession of engineers.
- She highlighted the low representation of women in senior engineering management positions (less than 1%) and also noted that there are only three women professional engineers who are board members. She pledged the Ministry's commitment to addressing this situation.
- Noting that women have low networking abilities, she urged WEC to find other networking models giving an example of women PS who had formed a networking platform.
- On Board representation, she also informed WEC to also focus on Private Sector boards since they are also expected to comply with the 1/3rd gender rule.
- On education, she noted that the digital literacy program has provided increased access to girls to STEM.
- She also noted that the 30% preference schemes for WYPWD had led to increased participation of women in energy, mining and construction industries while over Kshs 20billion of women funds had been disbursed.



## nya (IEK)- Women's Chapter



Her own advice, following the completion of the formal written speech covered:

- WEC to partner with government agencies and ride on already established systems.
- WEC to focus on the pipeline supply of future women engineers by investing in nurturing school girls and universities. She also urged WEC to seek collaborations and support from corporations such as offering internships targeting girls.
- She promised that the Ministry will support WEC if we develop a comprehensive 1 year mentorship program with specific targets.
- She also urged WEC to also include women engineers who are not in the traditional fields of infrastructure and manufacturing in its programs.
- She concluded by reaffirming the Government's commitment in supporting and championing gender equality and women empowerment through the Ministry and other institutions such as the National Gender and Equality Commission.

Eng. Margaret, WEC member, appreciated the lessons learnt from the PS and expressed her gratitude to her for taking time to grace the event. She promised that WEC will focus on formulating workable strategies to promote gender mainstreaming in engineering profession. Upon formulation of the strategies, WEC will seek guidance and partnership with the Ministry of Public Service, Youth and Gender affairs.

Eng. Jane appreciated the Chief Guest and awarded her a gift of appreciation. She then moderated a session on receiving feedback from participants. Participants generally expressed their satisfaction with the conference and commended WEC for organizing the event. The conference ended at 2pm and participants proceeded to a networking lunch.



# IN THEIR OWN WORDS







## **Yvonne Mwangi**

**B.Sc. Environmental Biosystems Engineering  
University of Nairobi**

**M.A. Urban Planning  
Harvard University**

## **Describe your job.**

Urban planners help to keep a city organized and running well. We help decide where people live, work, learn, play, shop and how people move around the city. We try to organize the city space in a way that is fair, clean, inclusive and safe.

## **What problem does your job help to solve? How does your job make the world a better place?**

Urban regions many times are the economic engines of their countries. They are great places where people of all walks of life can interact. But they can also be polluted, congested, unsafe and very socially unequal. Planners try to emphasize the strengths of cities and minimize their less desirable traits.

## **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I did engineering because I was interested in the environment. I knew that people interact with their environment in different ways, and wanted to make sure that we developed in a smart, respectful fashion. I cared about how the natural and the built interacted, and that's something I took with me into urban planning.

## **What are you passionate about?**

Children, young people - While not formally, I have always let young people around me know how capable they are. I taught Bible classes to kids age 6-16 for about 4 years, I did high school outreach, and I have lots of young cousins, nieces and nephews. I care about how people perceive themselves when they are young.

## **What would you enjoy doing even if you were not paid to do it?**

Teaching. It's my alternate universe career. But I love what I do too

## **State some of your hobbies.**

I love wandering the internet. I like to read articles on urban issues as much as I like BuzzFeed. I love TV too. Netflix is the bomb. I do have friends though, and I'd rather brunch, or hang out at home, than do something loud and noisy. I do turn up once in a while.

## **What advice would you give your 16 year old self?**

Girl, take any and every opportunity to lead, to learn and to try new things. Do not ever let the fear of failure stop you from trying anything. You will be shocked at what you can accomplish, even the times you do fail.

## **What would you like to be remembered for?**

I want to be remembered as a city practitioner who was thoughtful and creative, helped create vibrant and lasting public spaces, and worked with humility to empower city stakeholders (including the informal sector, minorities and children) to help shape their cities. I want to help kids reach their education goals. How is yet to be determined but that would be a good legacy. Lastly, for being a good steward of my God-given gifts and using those gifts to build others up.



## **Norah Magero**

**B.Sc. Mechanical Manufacturing Engineering University of Nairobi**

**Certified Energy Manager**

## **Describe your job.**

I am currently an Energy Engineer and Manager. My job is to investigate the amount of energy you use to power up all the lights and electrical appliances such as computers, microwaves and much more. I then compare the total amount of energy you consume to the electricity bill you pay each month. With this information, I advise individuals and companies on how they can save money by practicing ways of reducing the amount of electricity they use or recommending and designing systems that can be used like solar.

## **What problem does your job help to solve? How does your job make the world a better place?**

A lot of people do not have electricity or any other reliable source of energy. This means that important amenities as hospitals and institutions based in these regions lack electricity as well. My job results into savings in energy consumed by those who have access and the surplus can then be channeled to areas that have none. Furthermore, lacking access to electricity has forced a lot of people in Kenya and Africa to rely on charcoal and kerosene that pollute the environment by emitting carbon into the atmosphere. Energy Management recommends the use of renewable sources of energy as Solar, Wind, biogas and biomass which help to avert effects of global warming.

## **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I wanted to be an inventor. I also wanted to provide solutions to various sorts of problems. My greatest influence was my Dad's car. I wanted to be the one to service and repair it for him so that he would never go to the mechanic again, plus I wanted my Dad to be proud of me.

## **What are you passionate about?**

I am passionate about education and knowledge acquisition. I have discovered that there is a lot of misconception in the world today and only knowledge gives clarity and demystifies certain important issues. I am also passionate about environmental conservation and I'm still figuring out the most practical conservation measures for a typical African community.

## **What would you enjoy doing even if you were not paid to do it?**

Teaching kindergarten children. They are free spirited, innocent, fascinating and energetic. They also ask the most ridiculous questions so I enjoy 'putting things straight' to them.

## **State some of your hobbies.**

Writing, reading, listening to music, camping, watching mega-factories and 'How To' videos on YouTube.

## **What advice would you give your 16 year old self?**

Save! Save! Save! Save every dime your hands can get hold of. Delay the gratification for a greater reward.

## **What would you like to be remembered for?**

As being limitless! I will not be limited by gender in a profession dominated by men. I will also not be limited by my choices in life.



## **Juliet Mumbua Muli**

**B.Eng. Aerospace Engineering**

**Chartered Engineer, MIMechE**

**University of Liverpool**

## **Describe your job.**

I am a Plant Performance Engineer for Nuclear Power Stations. I help diagnose issues on the stations' mechanical systems by using mathematical modelling tools. I also supervise similar work performed by contractors. I am taking up a new opportunity in Operational Fleet Management where I will be working on and managing improvement programmes across a fleet of power stations.

## **What problem does your job help to solve? How does your job make the world a better place?**

I cannot imagine a life without electricity not just for the simple pleasures of technology but also for essentials like heating, water pumps and food storage. My work and my organisation provide low carbon electricity that powers the modern life we live. I am proud to work in an industry where sustainability, being good to the environment and planet are important.

## **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I loved Math and Science. There was really no career guidance in our schools so I chose the university course which focused on these subjects. Engineering is about problem solving and so I took to it like a duck to water. That said, my initiative Ajira Stadi hopes to help youth make more informed choices.

## **What are you passionate about?**

Education, energy, industry, about young people and the future of Africa.

## **What would you enjoy doing even if you were not paid to do it?**

I would teach, mentor and speak. In fact, I do this presently at my work place where I lead an outreach programme with other volunteers to encourage school kids to relate STEM subjects to real life and help them with career advice. I am in the process of starting an initiative to do similar work in Kenya.

## **State some of your hobbies.**

I love traveling the world and experiencing cultures. I also love reading, Afrobeat music, dancing, cooking for loved ones and sharing delicious cuisine from around the world, playing team sports and spending quality time with my nearest and dearest.

## **What advice would you give your 16 year old self?**

All things fade, good or bad. Feel the feelings but also remember to live in the moment and do not dwell in the good or the bad. Feel the feelings just enough, learn what needs to be learnt and keep it moving! There is so much time to experience life and not to rush into fads and peer pressure, the best is yet to come particularly when it comes to relationships.

## **What would you like to be remembered for?**

I would like to be remembered for being authentic, a person who said and did what they truly believed in and in so doing changed her world. I would also like that which I dedicate myself to do, to be so embedded in the lives of those I wish to serve, that it will outlive any memory of me.



## **Salome Gichia**

**B.Sc. Electrical Electronics Engineering**

**University of Nairobi**

### **Describe your job.**

I am a solar PV engineer. My job is to design and install solar energy systems that is systems that get their power from the sun.

### **What problem does your job help to solve? How does your job make the world a better place?**

My job is really about improving the livelihoods of people. The lack of electricity and modern energy access profoundly limits a country's economic development, constrains people's life chances, undermines proper education, and traps millions in extreme poverty. By exploiting this renewable energy which is locally available we attempt to bridge that gap which will in turn improve energy efficiency in the country.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

Honestly, I just happened to choose a career in Engineering because I had always been good in mathematics and sciences. My greatest influence I can say was the desire to make an impact in the world.

### **What are you passionate about?**

Renewable energy in Africa and its ability to shake up Africa's economy to its full potential, Traveling and discovering and reading books by African authors.

### **What would you enjoy doing even if you were not paid to do it?**

Traveling. Simply because it's one of the best ways to get exposed, learn and get your creative juices flowing.

### **State some of your hobbies.**

Bike riding, Traveling, Nature walks, Photography

### **What advice would you give your 16 year old self?**

Be human, be flawed and patient with your evolution. Always let your passion to make an impact in the world drive you to endless limits.

### **What would you like to be remembered for?**

Besides good humour & kindness, I would like to make an impact by improving the livelihood of our African people through lighting up homes and ensuring access to sustainable renewable energy.



**Nelly Yimbo**

**B.Eng. Chemical Engineering**

**University of Pretoria**

### **Describe your job.**

I am a Product & Process Development Engineer. Normally, when you are cooking, especially when baking, you often follow a recipe. Similarly, when a factory needs to make products like margarine, shampoo or washing powder, they also need to follow a 'recipe'. My job is basically to design that recipe. This means I tell them which ingredients they need to use, when to add in what ingredient, which bowl to use, which spoon to mix it with and how fast they can mix.

### **What problem does your job help to solve? How does your job make the world a better place?**

My job helps make everyone's life a little easier. From ensuring you have the right body wash that will leave your skin feeling soft, to ensuring that the washing detergent you use, cleans efficiently but uses up less water and in that way you enjoy clean clothes but end up with a smaller water bill!

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I needed something that had Math in it but not too much that I would lose my mind. The Chemistry and Physics were a good bonus.

### **What are you passionate about?**

People, Science, Reading, Traveling, Sharing knowledge and Debating.

### **What would you enjoy doing even if you were not paid to do it?**

Reading

### **State some of your hobbies.**

Watching copious amounts of YouTube videos

### **What advice would you give your 16 year old self?**

Nothing. I messed up a lot, and there was a lot of growth that came from the mess. It's cliché, but I really wouldn't be the person I am today without that mishap. I still cringe when I look back though.

### **What would you like to be remembered for?**

That I cared and loved the people that got to be around me. I would hope that they feel that they were deeply loved and adored.



**Maria Ongare**

**B.Sc. Electrical Engineering**

**University of Manitoba**

### **Describe your job.**

My current job title is Technical Support Electrical Engineer-in-Training at SaskPower, Saskatchewan, Canada. As a Technical support Engineer, my role is to provide support to maintenance and operations personnel in keeping the power plant up and running on a daily basis.

### **What problem does your job help to solve? How does your job make the world a better place?**

My job enables me to use innovation to provide reliable power to my immediate community. I work at a coal power plant that uses a proprietary process to reclaim carbon and sulphur dioxide from the exhaust fumes produced during power production. It is the first carbon capture plant of its kind in the world. Coal is not an ideal source of energy as it has a high carbon footprint. The clean-coal initiative is therefore a great example of how ingenuity can be used to provide a solution to a problem while sustainable strategies are being developed on how to transition to renewable energy sources.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I initially wanted to study Biomedical Engineering with a focus on radiation and imaging for cancer treatment. Growing up in a time when cancer was increasingly becoming a leading cause of death in Kenya, I wanted to play a part in ensuring that diagnostic and treatment equipment was made available to most Kenyans who needed it. Once I joined University, I realized that Biomedical Engineering is heavily research-based, which wasn't my cup of tea. I opted for power systems instead and I'm quite happy with the path my career has taken.

### **What are you passionate about?**

I'm a huge proponent of personal growth/health and wellness. Having struggled through my pubescent years and early twenties, it has become very important for me to invest in my well-being and focus on creating a life that I want for myself. Having a balanced life and a healthy relationship with self creates a great foundation for one to live free and influence others positively.

### **What would you enjoy doing even if you were not paid to do it?**

On a very light note, I would be a chef for free... any day.

### **State some of your hobbies.**

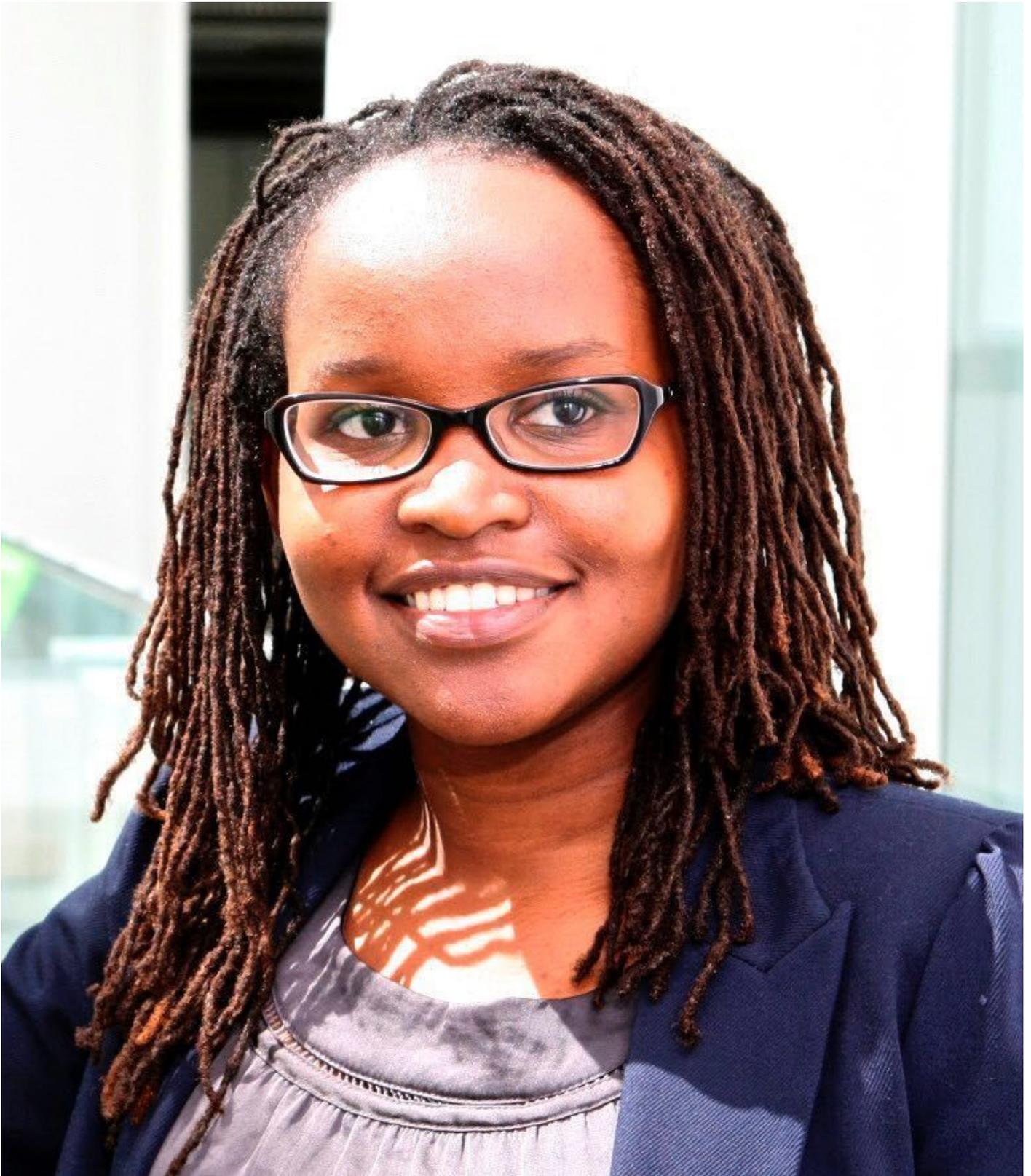
I'm a very adventurous person- constantly trying out new activities and I absolutely love to travel and experience different ways of life. I work out at least four times a week and have recently become obsessed with listening to podcasts.

### **What advice would you give your 16 year old self?**

If you're winning in your head, you're winning in life. Trust your abilities and know that you have the power to create a great life for yourself. Accept your body/personality and be your authentic self. No-one thinks you are unattractive as much as you do. Ease up on yourself. On Dating: Make a list of all the things you want in a partner. Become all these things to yourself. The rest will take care of itself. Finally, it takes work to be happy. Make the choice to enjoy your life!

### **What would you like to be remembered for?**

I would like to leave a legacy of positivity and excellence. I want to be that girl that people think of and feel warm and fuzzy, but also inspired and challenged to live large.



**Makena Ireri**

**M.Eng. Civil Engineering**

**University of Manchester**

## **Describe your job.**

My Background is civil engineering in the energy sector. I worked in the UK Nuclear Energy Industry for almost 5 years and now work for an NGO helping companies deliver renewable energy projects in Africa. I run projects and programmes that help people to access clean, safe and reliable energy. What I do helps people move from using "dirty" energy such as kerosene to using (and being able to afford to use) "clean" energy such as solar power or wind power.

## **What problem does your job help to solve? How does your job make the world a better place?**

My job is helping to sustainably solve the issues around energy accessibility and affordability for those living at or below the poverty line. Eventually, this will create a world in which everyone can be able to access and afford the energy they need to lift them out of poverty and give them the standard of living they want and deserve.

## **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I wanted to do Science, help people and learn some cool new stuff. That doesn't automatically shout engineering but by a process of elimination and chatting with my parents and their friends, I landed on engineering. I think my biggest influence was a love of Physics, my supportive parents and curiosity.

## **What are you passionate about?**

Obviously energy and energy provision, especially for the poor and other marginalized groups. I really believe that access to safe, affordable and reliable energy is a massive catalyst for economic development. I'm also a feminist – I'm passionate about gender equity and giving a fair chance to all. I think feminism is misunderstood especially in the African context and I want to be a part of that conversation.

## **What would you enjoy doing even if you were not paid to do it?**

I think I would enjoy being an advocate for feminism and energy access as a tool to fight poverty. I like talking about these things with people who agree with me and especially with those who don't!

## **State some of your hobbies.**

I paint and craft to recharge and escape for an hour or 6.

## **What advice would you give your 16 year old self?**

Try everything you want to try at least once but don't wait too long before you decide what to put your focus on. You have to know that you can't do everything and if you do, you won't do any of it very well.

## **What would you like to be remembered for?**

Having given someone or some people more choice and agency over their lives than they previously had.



# **Fatuma Mohamed Ali**

**B.Sc. Electrical and Electronics Engineering  
University of Nairobi**

**M.Sc. Renewable Energy  
University of Oldenburg**

### **Describe your job.**

I am a Protection Engineer at Kenya Power. I ensure that Kenyans have access to electricity by working on the equipment that brings electricity safely to homes.

### **What problem does your job help to solve? How does your job make the world a better place?**

My job solves the problem of access to reliable electricity. I have gone back to school to study renewable energy. This is energy from clean natural resources such as the sun, wind and biomass. This will help reduce carbon emissions to the atmosphere.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I love finding solutions to problems. Engineering is all about finding simple solutions to everyday problems.

### **What are you passionate about?**

I am passionate about ending world poverty. I'm interested in: ensuring that all Africans have access to clean energy; the unrestricted access to education for girls and women empowerment both in schools and at the workplace.

### **What would you enjoy doing even if you were not paid to do it?**

I would work as an aerobics instructor.

### **State some of your hobbies.**

Traveling, reading, listening to music and cooking.

### **What advice would you give your 16 year old self?**

Believe in yourself. The greatest enemy of success is self-doubt.

### **What would you like to be remembered for?**

For standing up for the 'voiceless'. I want to be a role models for girls in Africa.



# **Felistus Ayera Misiko**

**B.Sc. Electrical Electronics Engineering**

**University of Nairobi**

### **Describe your job.**

I'm a Graduate Electrical Engineer at the Kenya Electricity Transmission Company (KETRACO). My job is mainly designing and constructing transmission lines and electrical substations.

### **What problem does your job help to solve? How does your job make the world a better place?**

We transmit power from generation stations to load centres in the country which improves reliability of the network and increases access to electricity.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I was fascinated with the idea of protons and electrons and the flow of electricity as a whole. I wanted to really understand how electrical systems work at a young age. My high school physics teacher was very helpful in making me understand what it all entailed.

### **What are you passionate about?**

Engineering systems and mentorship.

### **What would you enjoy doing even if you were not paid to do it?**

Designing electrical networks and helping vulnerable children and women.

### **State some of your hobbies.**

Outdoor activities, watching movies, mentorship and reading.

### **What advice would you give your 16 year old self?**

There's a lot to be achieved in a lifetime, never get satisfied.

### **What would you like to be remembered for?**

Helping girls in the society to achieve their dreams.



# **Valentine Wanjihia**

**B.Sc. Mechatronic Engineering  
Jomo Kenyatta University of Agriculture and  
Technology**

**MBA, USIU**

**PMP (Project Management Professional)**

## **Describe your job.**

I am a Coordinator in the area of Donor Compliance and Resource Mobilization. Basically, I ensure that donor funding has been utilized for its intended purpose and when programme/ project objectives are delivered successfully, I use this to leverage the organization for more funding.

## **What problem does your job help to solve? How does your job make the world a better place?**

Our programme works with communities living in poverty to improve livelihoods and food security, to build capacity to challenge governance; demand accountability and to fight against gender based violence through access to justice and awareness creation programmes.

## **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I actually wanted to be a pilot but was urged to get a university degree first. Growing up, my dad talked a lot about all things manufacturing. The idea of turning raw materials into consumer products was fascinating. That, coupled with a love for Math and Physics influenced my decision to be an engineer. I worked as an engineer for 5 years before moving to international development programmes.

## **What are you passionate about?**

Poverty elimination in the African context and the rights of women and girls.

## **What would you enjoy doing even if you were not paid to do it?**

Put up a rescue center for women and girls. It would be a humbling experience to make a home for victims of violence and support them in rebuilding their lives.

## **State some of your hobbies.**

Traveling, traveling, traveling. Every year, I add a country or two to my wish list, based on sites and adventures to explore but available resources do not quite expand at the same rate as my travel ambitions.

## **What advice would you give your 16 year old self?**

Be deliberate about identifying the thing that makes you jump out of bed and once you do, don't let society, culture or norms talk you out of it.

## **What would you like to be remembered for?**

I would love to be remembered as a feminist but there's a certain level of activism that comes with consequences that would cause my family sleepless nights. Even so, I do hope to be remembered for impacting the lives of women and girls living in poverty and exclusion.



# **Ng'endo Macharia**

**B.Sc. Geospatial Engineering**

**University of Nairobi**

### **Describe your job.**

I'm a GIS technician. I collect and represent information about our environment through maps. For example if I want to show all the roads that are found in Nairobi, instead of listing them in a very long sheet, I'll show them all in a very simple map, where you can be able to get more information to help you navigate around the city.

### **What problem does your job help to solve? How does your job make the world a better place?**

Using the example about roads in the city, I will collect data about the roads such as what position does it occupy? What is the name of the road? Who is the road serving? How many lanes does it have? Does it have potholes? How many other roads are connected to it? Once all this information is gathered, I use specialized software to visualize and manipulate it to get information for instance, the road has potholes because heavy trucks use it regularly or maybe there's no drainage thus contributing to weathering of the road surface. It's that information that's used to make decisions like, should heavy trucks be diverted to other roads instead or does a drain need to be constructed? In this case, good transportation ensures products can move easily and affordably from factory/farm to market hence contributing to economic growth.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I wanted (still want) to work for Mercedes and I really liked Math. Engineers are problem solvers, I wanted to solve as many problems as I could with the skills I would gain.

### **What are you passionate about?**

Mentorship- if I can pass on anything I've learnt I will not hesitate to.

### **What would you enjoy doing even if you were not paid to do it?**

Anything art related

### **State some of your hobbies.**

Baking and eating baked goods, sketching, reading anything and everything (especially comic books)

### **What advice would you give your 16 year old self?**

That you live and you learn, appreciate every experience for what it is and learn from it. Also when you get offered a chance to go on a Euro trip, don't think twice just go!

### **What would you like to be remembered for?**

Being a positive influence on everyone i ever interact with.



## **Wendy Ombima**

**B.Sc. Telecommunication Information  
Engineering**

**Jomo Kenyatta University of Agriculture and  
Technology**

### **Describe your job.**

I am currently a Technology Project Management Consultant. I help telecommunication and software engineers successfully implement their projects from beginning to end.

### **What problem does your job help to solve? How does your job make the world a better place?**

Project Management ensures that projects are implemented to a high quality with respect to resources, schedules and budget. This management of resources directly influences productivity, which in turn contributes positively to a country's economy. If people and resources are more efficiently used and managed, their output is likely to increase and be of high quality.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

My interest and love for physics was a huge bias. I enjoyed learning how stuff works, and the thought that I could—with a set of information—design and build things. There was also the need to challenge stereotypes of the day, in terms of work prescribed for women versus men. Finally the erroneous assumption that I would not struggle getting a job and that I would get a massive pay check!

### **What are you passionate about?**

Professionally, I am passionate about Engineering, Telecommunications and Project Management. I am also passionately curious about development, world economies and generally how the world system runs.

### **What would you enjoy doing even if you were not paid to do it?**

I would enjoy teaching. There's so much power in being responsible for influencing how people think.

### **State some of your hobbies.**

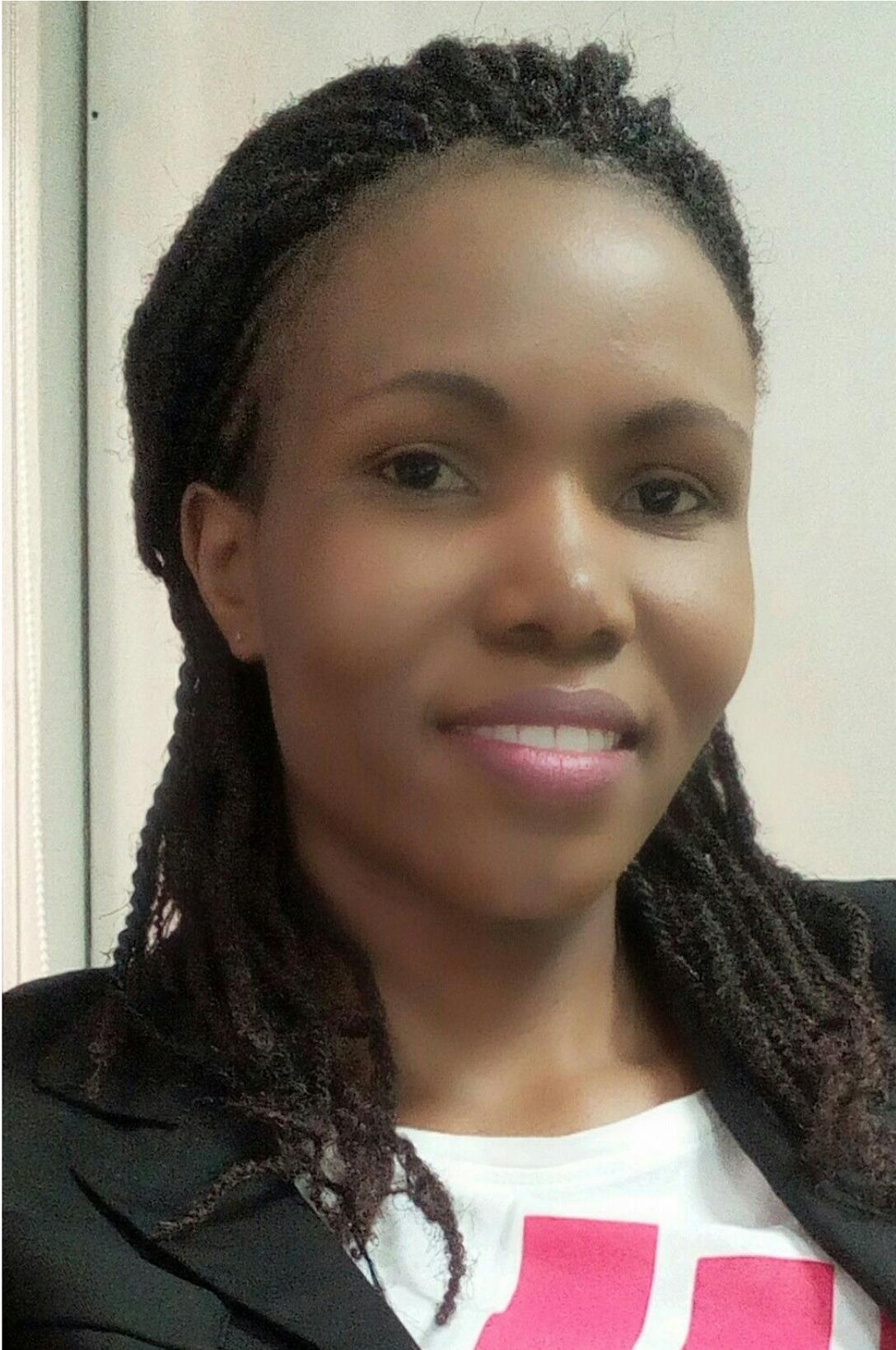
I spend my free time either singing, reading, participating in engaging conversations or chilling with friends.

### **What advice would you give your 16 year old self?**

Hard work never killed anybody. Keep it up, it will pay off.

### **What would you like to be remembered for?**

Being brave enough to challenge the status quo and fighting and dying for the truth.



## **Carolayne Kosgey**

**B.Sc. Electrical Telecommunications Engineering**  
**Moi University**

### **Describe your job.**

I work for Kenya Power Company as a Telecommunications Graduate Engineer. In a summary, my job involves a suite of technologies, devices, equipment, facilities, networks and applications that support communication.

### **What problem does your job help to solve? How does your job make the world a better place?**

My job helps to solve business complexity and connectivity problems. What I am doing serves as the lifeline of global commerce, allowing us to easily conduct business across national borders while reducing costs and increasing productivity.

### **Why did you choose a career in Engineering? What was your greatest influence in making the decision?**

I chose a career in Engineering because it is the ultimate field for challenge and creativity. My greatest influence in making the decision was my curiosity about how things work and having a keen mind for applying what I learn to solve real world problems.

### **What are you passionate about?**

I am passionate about life itself, living in the moment and anything to do with telecommunications.

### **What would you enjoy doing even if you were not paid to do it?**

Helping others to recognize their spiritual bankruptcy before God. It is understanding that we have absolutely nothing to offer God. I would also enjoy encouraging others to relentlessly pursue their dreams.

### **State some of your hobbies.**

Traveling & Swimming

### **What advice would you give your 16 year old self?**

You must lose the fear of being wrong to live a creative life. Seemingly wrong decisions open up new avenues with new opportunities for us to take up. Again, a curious mind is open to God's dynamic and creative work on this world.

### **What would you like to be remembered for?**

I would like to be remembered for the problems I solve.



# REFERENCE MATERIALS

Here are some links to the pages where we draw our inspiration from; spaces where engineering interest is nurtured, networking communities for people with similar interests and initiatives run by women for women! (Click on the links to find out more!)

1. **Safaricom Discover Program**
2. **Engineer Girl**
3. **STEM Women**
4. **African Science Academy**
5. **STEMettes**
6. **TechWomen**
7. **Sci Chic**
8. **Kenya Engineer**
9. **Young Engineers- Kenya**
10. **Exploring Engineering**
11. **Cisco Women in Technology**
12. **Online Tool to Track Women in Engineering**
13. **The Passionate Professional**
14. **Scratch**
15. **Opportunities for Africans**
16. **Women in STEM who Rock**
17. **Kids Invent Stuff**





We welcome feedback and look forward to your guest contributions! Feel free to contact us on:  
[shapingafricanconversations@gmail.com](mailto:shapingafricanconversations@gmail.com)