Alpha Eritrean Engineers Magazine

FEBRUARY 2016
VOL 7 NO. 1

SOLAR POWER FOR AFRICA'S OFF-GRID COMMUNITIES

CONVERSATION WITH PROSPECTIVE ENGINEER SOLOMON MULUGETA

AEEC gathered to listen to Africa's Solar Power presentation on Sunday 10-11-15 at Mudai Restaurant Located in San Jose, California California

CAPTAIN OF YOUR JOURNEY, AUTHOR OF EXPERIENCE & ARTICULATOR OF YOUR STORY

LIST OF ENGINEERING OPPORTUNITIES

AEEC

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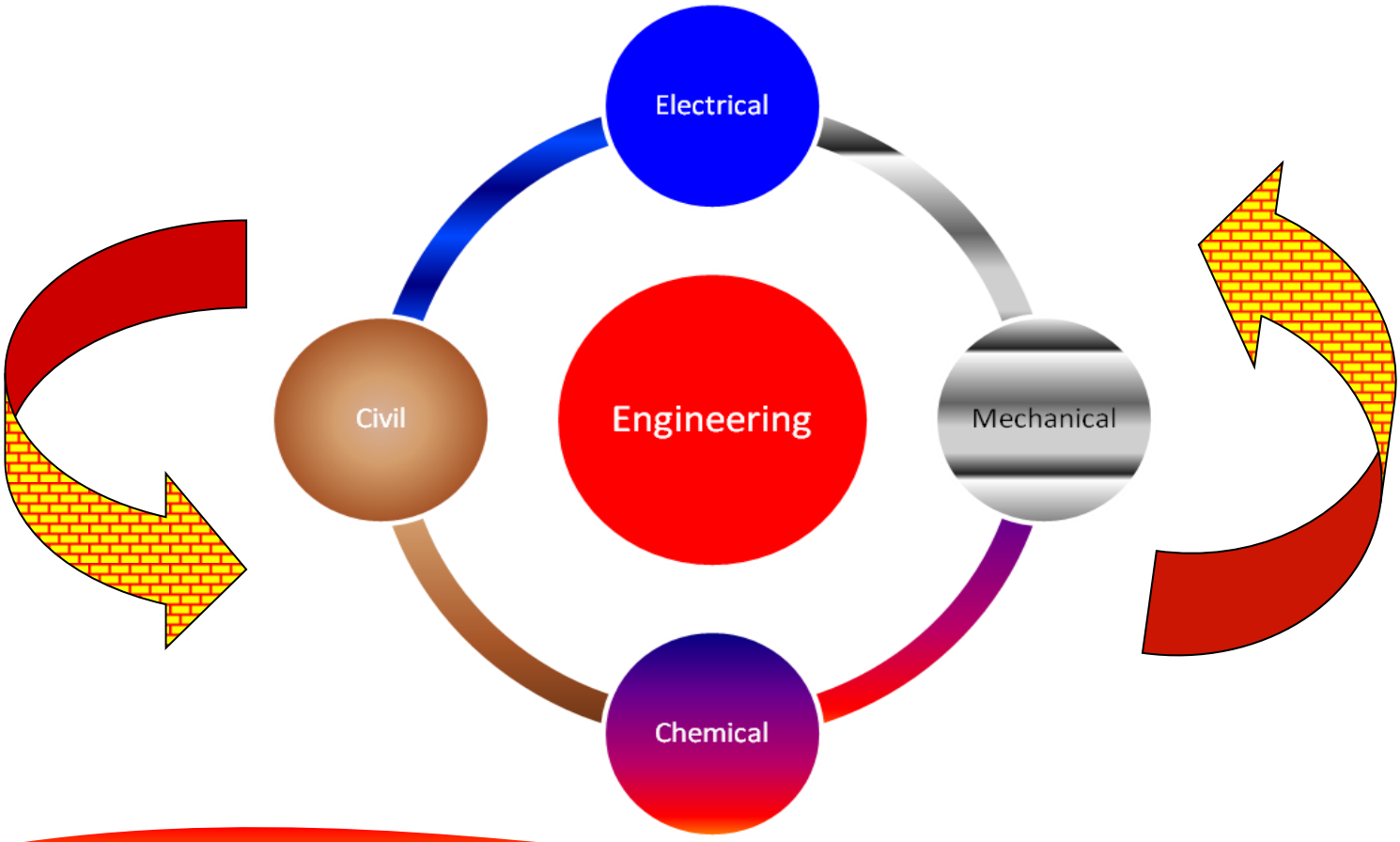


Cost Effective Solar Power for Africa's Off-grid Communities

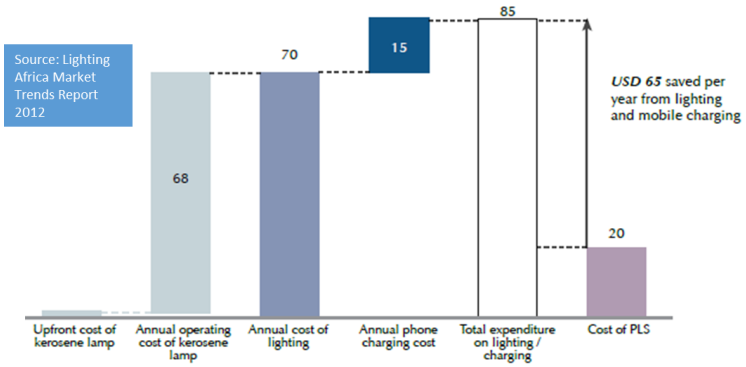
Tewelde Stephanos started his professional life in Silicon Valley. He left Hewlett-Packard to start TFanus Enterprises in Eritrea; one of the first Internet Service Provider companies in the country. TFanus also pioneered a business culture based on the HP Way. A work environment where employees felt safe, respected and empowered along with profit sharing and company picnics were implemented early on. These key company policies were instrumental in attracting and retaining some of the best talents in the country. In 2014, he started Solar Smart Africa whose primary mission is to **defeat darkness.**

Current State

According to the International Energy Agency (IEA), over 620 million people in Sub-Saharan Africa have no access to electricity[1]. An estimated five people per family, which means over 120 million households, continue to live in the dark after sunset. Studies by Lighting Africa[2] (Fig. 1) shows these households currently spend approximately $70 USD every year for sub-standard kerosene-based lighting. These lamps are very dim and dirty. They are also considered a serious fire hazards and major cause of respiratory health issues, especially for women and children.

At $2 USD, the kerosene lamp itself is not expensive (Fig. 1), but the kerosene is. It costs families $68 USD every single year, while at the same time draining hard currency reserves of already strained national budgets.

Transitioning to mobile phones, on a positive side, mobile phones have penetrated deep into rural Africa. The 2013 data shows 65% of households owned a mobile phone and it is expected to grow to 79% by 2020. This is a good example of how newer technologies (wireless in this case), continue to leap-frog very expensive old technologies (landline infrastructure). Such welcome developments are enabling low-income communities to rip the benefits of new technologies quickly and affordably. However, these phones use batteries and batteries do run out. Currently, households spend $15 USD every year for very inefficient ways to have their phones charged. People typically wait for someone to come to their villages or they must walk long distances to the nearest town where charging services are available.



(pico-powered lighting system) are low capacity solar, crank or pedal powered systems.

Fig. 1 PLS

The Bottom Line is that Africa's off-grid communities whose incomes are among the lowest in the world, currently spend approximately $85 USD every single year to use very poor kerosene-based lighting as well as inefficient charging services for their phones.

There is a Better Way

Solar and battery technologies have improved greatly,

both in quality and functionality over the years. The prices of solar and battery also continue to drop. Solar panels are widely available now with useful life of 20-25 years and low-power consumption LED lights rated at 50,000 hours. Combined with high capacity batteries, these technological advances can greatly improve the quality of life in rural Africa.

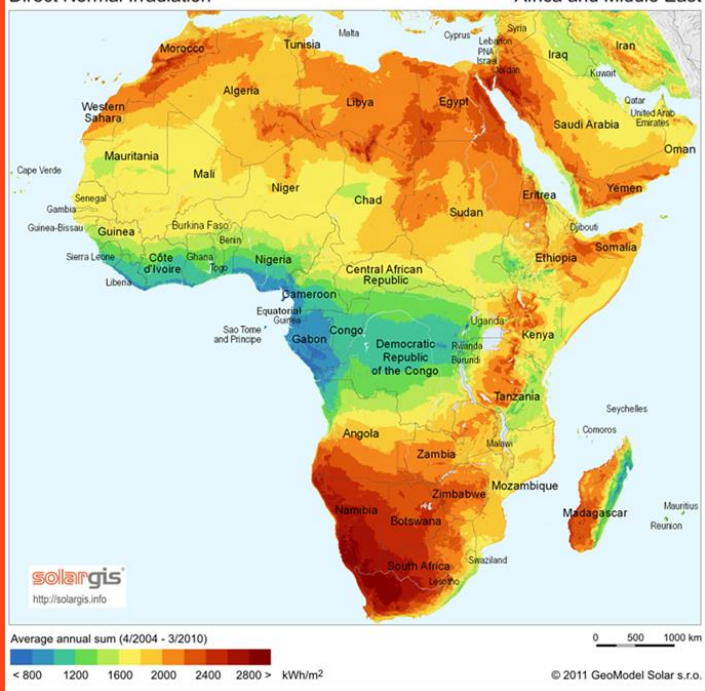


Fig. 2

- Except for some areas around the Equatorial rain forest, the rest of Africa is exposed to high levels of solar irradiation. Solar power generation capacity of 2KWh/m2 or more is possible in most areas.
- Although still very low compared to global norms, income levels are rising.
- Mobile phones have penetrated deep into rural communities in Africa. Leveraging these successes to solar technology solutions or bundling the two can dramatically increase the adoption rate of solar products. With access to energy alone improving Human Development Index (HDI) by 38%3, a much better quality of life than currently exists is an achievable goal.

Seeing the great positive impact solar technology can have on people's lives, many organizations are busy bringing solar products and solutions to Sub-Saharan Africa.

With the cited 38% improvement on HDI, providing access to energy is actually a fight against poverty. And the following products from Solar Smart Africa are designed to contribute to that effort. They include products with increasing energy capacity, starting with basic lighting and phone charging systems at the bottom of the energy ladder.

Solar Smart Lamps for off-grid homes and small businesses

One or two lamps are a good match for typical village homes. For larger homes, small businesses or community events such as a wedding, one can use 3 to 5 lamps per controller. Each lamp has three brightness levels to accommodate multiple cloudy days.

Each lamp provides bright and efficient LED lights with ability to charge mobile phones, enabling households to become self-sufficient in these two key areas

- Assuming 5 hours of use per night, a fully charged battery lasts up to 7 days depending on selected brightness level.
- Easy setup: simply charge the lamps and place them

anywhere. No external wiring necessary.

- Village entrepreneurs can generate extra income by renting lamps or by providing mobile phone charging services.

Companion Product

SolarSmart Lamps are designed to light rural homes and small businesses. The ***SolarSmart Lantern*** is a portable companion product that can be used as a lantern or as flashlight for safer mobility after dark – especially for women and children.

One product, three functions

- Collapse to use as flashlight
- Expand to use as student desk lamp
- Mobile phone charger

Climbing the energy ladder

500W to 4KW solar generator to power bigger appliances such as village clinic refrigerators, fans, PCs, TVs …

Coming Soon

Injera solar cooking stove

Increasing adoption profitably and affordably

As mentioned above, households currently spend up to $85 USD every single year. But the ***SolarSmart Lamp*** with good lighting and ability to charge mobile phones is priced to sell in the range of $50 USD to end customers. This could vary slightly depending on local realities related to transportation costs and customs fees. With estimated lifetime of 20 years or more, cost of ownership (including battery replacement cost at 3 to 5 year intervals), is less than $1 USD/month.

For families who cannot afford to pay the full price in a

single transaction, there are sustainable lease-to-own or rental options that commercial distributors and grass roots organizations (such as churches, mosques, women's organizations or farmer's associations) can implement profitably.

At $50 USD range to the end customer, some serious issues can be addressed:

- Provide much superior alternative to kerosene lamps at 40% discount during the first year alone.
- Households no longer need to spend $85 USD for kerosene and mobile phone charging fees every single year, this $85 USD annual expense is now converted to family savings.

Those who can pay the initial $50 USD cost in one transaction will be able to realize the above benefits immediately. To accommodate the needs of households who cannot pay the full price in one transaction, creative and profitable lease-to-own or rental programs can be put in place. To make this sustainable, it is critical that those implementing the program do so profitably for the program to be successful. After paying these small monthly amounts for a year or two, families then own the product free for about 20 years.

Lease-to-own Implementation scenario

Commercial distributors can implement the program on their own. But grass-roots organizations (such as churches, mosques, women's organizations or farmer's associations) will probably need funding partners for the first year. A typical best-case scenario could be for a development partners (UNDP, government programs, local or international NGOs etc.) to cover the first year's cost to power 10,000 rural households. After year 1, the local implementing partner will have sufficient funds to finance 10,000 families profitably year-over-year. The table below demonstrates such a scenario.

Yearly, USD	Monthly, USD	
85	7.08	<-- Households pay this every year now for inferior products & services
70	5.83	
60	5.00	
50	4.17	<-- Option to own superior products for free after a two-year lease
40	3.33	

Current State

		Annual Revenue Stream for Administering Organization					
	Monthly, USD	Year 1	Year 2	Year 3	Year 4	Year 5	
	4.17	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	
Households served		10,000	20,000	30,000	40,000	50,000	
Round 1		500,000	500,000				
Round2			500,000	500,000			
Round 3				500,000	500,000		
Round 4					500,000	500,000	
Round 5						500,000	500,000
Yearly Profit, USD		500,000	550,000	550,000	550,000	550,000	

Lease-to-own or Rental

Key Assumptions

- Cost of high-quality Solar Smart Lamp and mobile phone charger for 10,000 households = $300,000 USD
- Gross profit for implementing partner = 50% (150,000 USD)
- Total Year 1 project cost = $450,000 USD. If implementing partner is non-commercial entity (faith groups, women's organization etc.), funding partner covers first year's cost to kick-start the program thus the $500K profit in year 1.
- Implementing partner collects 500K during year 1 to finance 10,000 households for round 2
- Implementing partner collects 1M during year 2 (500K from year 2 of round 1 and 500K from year 1 of round 2)
- $450K of this $1M goes to finance the next round leaving implementing partner with $550K profit for the year.

The key benefit of this model is that the families own the product after a two-year lease and the implementing partners generate sufficient profits to finance their operations and the next round of 10,000 households every year.

The implementing partner can match the lease conditions to local realities. For example, the monthly payments can be less during low-income season and higher during harvest season. Currency fluctuations is also an important parameter partners need to take into account. Typically, this should not have undue influence on the program. Dictated by prevailing economic realities, it is normal for prices including that of kerosene to fluctuate.

Why This Matters

Credible studies show access to energy alone improves Human Development Index (HDI) by 38% . Therefore, access to energy is directly linked to the fight against poverty and should have positive impact in the following key areas:

1) **Better health:** Eliminates respiratory health issues, eye irritation and fire hazards associated with kerosene use.
2) **Students read more**: Clean and bright lights encourage students to study longer. This increases the likelihood of children from rural communities becoming top performers in their country. And the more this happens, the more likely it is for poverty to go down in their families and the communities they come from.
3) **Higher income:** Extra income through extended business hours for restaurants, tea/coffee houses, shopkeepers, hair dressers etc. Additionally, what used to be annual expense of $85 USD, now becomes family savings.
4) **Higher Productivity:** No time and money wasted to buy or store kerosene.
5) **Improved Hard Currency Reserves:** Countries can re-allocate scarce foreign currency previously used to import kerosene to other national priorities.
6) **National carbon-offset benefits:** The CO2 previously emitted by kerosene lamps no longer goes to the atmosphere. The CO2 offset at the household level is difficult to track individually to benefit the household directly. But these CO2 savings can be aggregated at the national level to create national carbon offset credits.

Conclusion

Providing access to energy is a direct fight against poverty. Like mobile phones demonstrated how successfully new technologies (wireless) bypassed the old (landlines), the same applies to electricity. The main power grid infrastructure is too expensive to expand to rural communities. And the little that exists is unreliable. This economic reality also makes it impossible for new grid lines to be dropped down to village households even as those grid lines pass directly overhead. But solar technology can bypass the main grid to empower energy-

starved households, much like mobile phones did to landlines.

The good news is Africa is blessed with excellent solar irradiation coverage (Fig. 2). This creates the necessary conditions for solar products to flourish. As a result, high-quality solar products that are friendly to the environment as well as to national and personal budgets are trickling in into the marketplace. Solar lighting and mobile phone charging devices are no doubt critically important. They can help liberate over 620 million people from darkness. But these products are only the bottom step of the energy ladder. More can and should be done.

Although the technology is improving rapidly, national energy policies and customer adoption are lagging far behind. Some countries continue to subsidize kerosene, for example, which is not the desired long term incentive. Additionally, deforestation is a serious problem in many countries and people continue to use wood as their primary fuel for cooking. We need aggressive and forward-looking policies that encourage the right technologies with matching consumer incentives in order to massively increase adoption of solar products. When this happens, products with higher energy capacity to power cooking, refrigeration, ventilation, irrigation and entertainment devices will become commonplace; drastically reducing poverty in the process.

~ Tewelde Stephanos

1. https://www.iea.org/publications/freepublications/publication/AEO_ES_English.pdf
2. http://www.dalberg.com/documents/Lighting_Africa_Market_Trends_Report_2012.pdf
3. http://evanmills.lbl.gov/pubs/pdf/0747_Clean_Energy_Services_Report_03_web.pdf

ALPHA ERITREAN ENGINEERS MAGAZINE

FEBRUARY 2016 ISSUE

A E E C

Comments & Suggestions Page

Congratulations on the issuance of your professional magazine & sorry for taking time to respond while I have actually read all on time. Working in group with people in related discipline like this might seem meaningless in the short term but if you continue working harder and specially get linked with institutions at home there could be possibility to fill a gap especially in consultancy services.

Yohannes GhebreAb

Excellent Job!! Very Inspiring.

Marta Kidane, Structural Engineer

Excellent job!!!!!

Isaac Mesghena, Mechanical Engineer

ALPHA ERITREAN ENGINEERS

CONVERSATION WITH SOLOMON

To begin our discussion, we asked Mr. Solomon, who is currently attending a four year university some questions about how he made his educational and future professional choice. We asked him about his transition to college from high school, what college life is like, and any advice he would give high school students who are considering attending college and those who are currently attending college. The following are questions we asked Mr. Mulugata:

First and foremost we would like to thank you, Solomon for accepting our invitation for this conversation and your participatory time with Alpha.

Alpha: Would you please briefly tell us about yourself?

Solomon: I am in my fourth year at Santa Clara University pursuing a bachelor's degree in science. Although I dedicate a lot of time to my studies, in my off time, I enjoy playing basketball and soccer.

Alpha: What specific area in science are you majoring in and why did you choose this field?

Solomon: My major is specifically in Bioengineering. I chose this major based of what intrigued me while I was in high school. It was very difficult to determine what I wanted to do at the age of 17. However, my Advanced Placement (AP) Biology class was the course I found myself putting the most effort due to the interesting topics discussed in class. My biology class was also the most rigorous class I had to take in high school, giving me valuable insight as to what a college setting would actually feel like.

Alpha: Is college everything you expected it to be? Were your expectations particularly high (or low) as a result of the college admissions process?

Solomon: College was not exactly everything I expected it to be. When I was applying to various colleges, I was almost certain that I would attend a University of California (UC) school. However, as the admissions came out, Santa Clara University became the most attractive option for me. I came not knowing too much about Santa Clara, but once I was there, I knew it would be the college for me.

Alpha: What aspects of your college transition went well? What didn't go so well?

Solomon: My college transition went very well in terms of meeting new people and assimilating myself to college environment. However, during my first year of school, I had a very poor time management skills when it came to my studies which affected my grades. While in high school, I did not put too much effort in my studies because the material was not as dense and the competition was not as high. Once I realized, after my first year, I made it my priority to focus on my studies as an engineer before making time for social matters.

Alpha: How did you make the choice to attend your college or university?

Solomon: Santa Clara University gave me the best financial package. It was the best school I could go to, without having loans/debts hanging over my head. When I was first applying to universities, I was very narrow-minded when it came to the college I wanted to go to. I was determined and set on going to the highest ranked school, but I saw that most of the schools that accepted me did not give me any type of financial help. Looking back, accepting to go to Santa Clara University was the best decision for me.

Alpha: What kind of support did you get from your parents during the application process and during your high school years?

Solomon: My parents supported me a lot throughout my high school years especially through my

extracurricular activities. I played (3) sports in high school, and I really enjoyed it. Sports were a big part of my life during high school, so my parents made sure I kept on top of my studies when I came home.

Alpha: Are your family happy with your college or university choice?

Solomon: My family is very happy with my university choice. My cousin, Yohanna, attended Santa Clara University before me and graduated in 2014. My sister, Mayron, has followed in our steps and will be graduating in 2018. This school has been a great asset to our family an in preparing us for future success. This school is also a Jesuit University that is only 30 minutes away from where my parents live. Which means I can come home any time so I'm never really "home-sick."

Alpha: Do you have any regrets about your college search process?

Solomon: No, I do not.

Alpha: What were some of the most stressful moments that you experienced during the college admission process? Are you less stressed now?

Solomon: Like I said earlier, I was stressed that I would not get into a school with a good ranking. Once the acceptance letters came, I personally thought I would be going University of California Davis to study bioengineering. However, as I narrowed the schools I wanted to attend Santa Clara University became a more attractive option. Initially, for a short period of time, I was disappointed because many of my friends/classmates chose to attend UC Davis and only one other person from high school was going to Santa Clara University. I was more anxious than stressed as to what the future held.

Alpha: If you could give a high school junior or senior one piece of advice about applying to college, what would it be?

Solomon: Try to create an all-around image for yourself, especially when writing your personal but more of someone who is willing to make an impact. To go to college, you have to be a smart student. However, you need to ask yourself what makes you different. For example, I described how I was the captain for my cross country team in my personal essay and elaborated from there by describing how I had gained valuable leadership qualities because of that.

Alpha: How important are the grade point average (GPA), ACT and/or SAT scores for students who want to apply for engineering degree?

Solomon: GPA and SAT/ACT scores are very critical to apply for an engineering degree. Engineers typically have a more challenging criterion to be accepted into the school compared to business majors. I personally only took the SAT and my math score was very high. My GPA was also very good. I believe what separates me from my other classmates when I was applying was that I took many AP classes that were directly related to my intended major and I did very well in those classes.

Alpha: How many students do you think apply each year to the university you're attending, and how many are accepted?

Solomon: Around 15,000 students applied to Santa Clara University last fall, and about 7,500 students were accepted.

Alpha: What are the average grade point average (GPA), ACT and/or SAT scores for students accepted?

Solomon: The average GPA of an accepted student is 3.67. The average ACT score lies between 27 - 32. For the SAT, Santa Clara University only looks at the critical reading (avg: 590-680) and math (avg: 620-710).

Alpha: Are freshman courses taught by professors or teaching assistants?

Solomon: Professors in the engineering department teach all courses. However, teaching assistants do lead some labs.

Alpha: When do you think it necessary to declare a major?

Solomon: I think declaring a major at the age of 17 is very hard thing to do. However, if one does change his or her mind, it should be done (the latest) at the end of their first year. It takes time and a certain understanding to realize that this is not the path one want to take. My advice is to be confident in your decisions and stick with your gut. If you keep flip-flop on these decisions, you won't be in a good position.


Photo by Yohanna

Alpha: What percentage of students do you think graduate in four years? And how many go on to complete a master's degree in your school?

Solomon: 78% of students graduate in four years at Santa Clara University.

Alpha: What is the average school class size in the classes you attend?

Solomon: My average class size is approximately 25 students.

Alpha: Can you tell us an estimate of the student body demographics at the university you attend? Are there any other Eritrean descendants besides yourself?

Solomon: The following spreadsheet below shows the percentage of student demographics in the school. There are also about 15-25 students of Eritrean/Ethiopian descendants that attend to my school.

Ethnicity	Undergraduate	Graduate
American Indian or Alaskan Native	7(<1%)	3(<1%)
Asian	914(17%)	1,455 (41%)
Black or African American	175 (3%)	79 (2%)
Hispanic of any race	974 (17%)	369 (10%)
Native Hawaiian/Pacific Islander	13 (<1%)	8 (<1%)
White	2,667 (49%)	1,089 (31%)
Two or more non-Hispanic races or ethnicities	371 (7%)	94 (3%)
Race and Ethnicity unknown	365 (7%)	432 (12%)

Alpha: What percentages of college students live on-campus in dorms versus off-campus in apartments? Which one do you think accommodates better to new comers?

Solomon: For the first year, Santa Clara enforces all of its students to live on campus in dorms. After the second year of college, students usually tend to move to Off-campus apartments. I think staying on the campus is a big deal since it helps and fosters students be part of community, so they do not feel alone during their

transition phase from high school to college.

Alpha: What are the deadlines for admissions and financial aid (FAFSA) applications in your collage?

Solomon: I believe the deadline for admissions is January 7 for Santa Clara University. Financial aid applications are within the college applications. FAFSA applications are due February 1.

Alpha: When is the admission status decided, and when are you notified of acceptance/rejection?

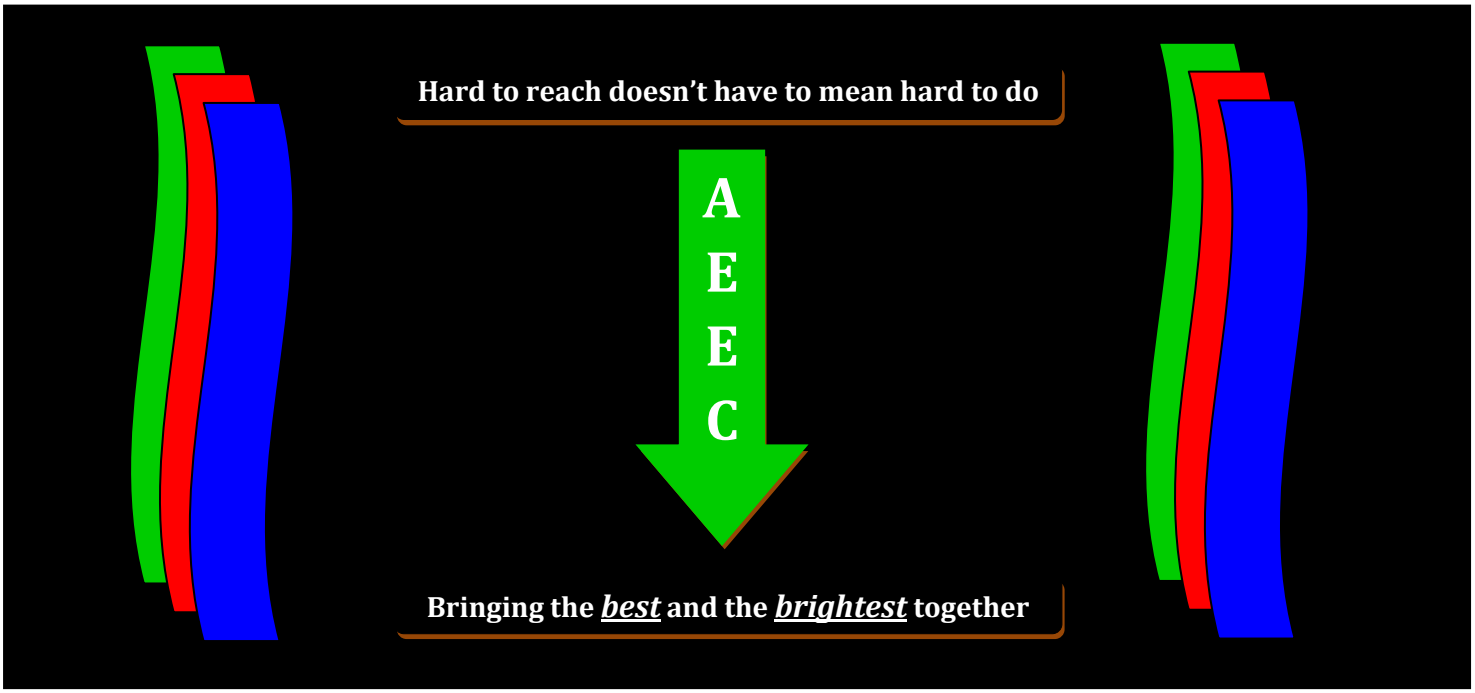
Solomon: Acceptance/Rejection letters usually come sometime in late March.

Alpha: What kind of job placement programs is available for students at Santa Clara University?

Solomon: At my school we have a career center, where there are listings for on-campus jobs and other opportunities. I have been working on-campus for over a year because of help I received from the career center.

Alpha: Thank you Solomon for being part of AEEM. It is certainly a great pleasure to talk to you and sharing you experience and input of your University. We have no doubt you are on the right track to success and rich experiences. You made us proud of what you have accomplished.

~ Solomon Mulugeta



THE EVER ILLUMINATING AND SHINING CITY OF ASMARA BY THE HORN OF AFRICA

ERITREA PURELY MAGNIFICENT

"THE SUN NEVER STOPS SHINING, SOMETIMES YOU JUST HAVE TO LOOK BEYOND THE CLOUDS TO SEE IT" ~ ARJUN LOVABLE

ALPHA ERITREAN ENGINEERS MAGAZINE EDITING MADE POSSIBLE BY

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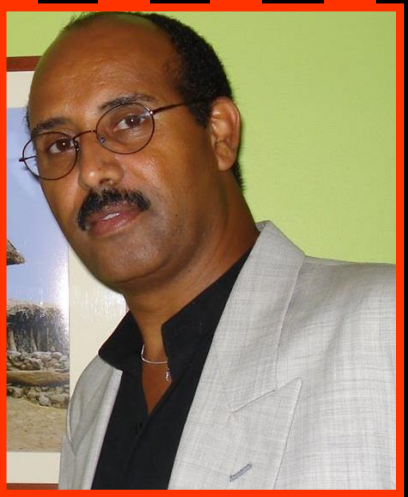


YOSIEF WOLDEMARIAM

SAMUEL FESSEHAYE

CAPTAIN OF YOUR JOURNEY, AUTHOR OF EXPERIENCE & ARTICULATOR OF YOUR STORY

I have learned to live over the years with not knowing my grandparents. I was not fortunate enough to meet or create memories with any of my grandparents whereas some of my siblings did have the priceless opportunity. Grandparents are not just grandfathers or grandmothers with silver in their hair and gold in their hearts. They are full of wisdom, comfort and guidance. I cannot comment about everyone's grandparents, since they all are different. However there is one distinctive characteristic I feel they share which is loving their grandchildren unconditionally, in abundance and are very supportive. Do you ever wonder why you know very little about the personal daily lives of your grandparents or great-grandparents?

Each one of my grandparents lived long, healthy and meaningful life. It has been some time since their passing however, I am very blessed to have heard incredible stories about each of them. When stories are told about them it gives me insight into their life and makes me happy. My grandparents were the embodiment of what true love meant. They are described as being very dedicated, determined, hardworking and gentle souls yet very fierce individuals when necessary. I could not be more thankful to those who knew them personally and are able of sharing my grandparents' childhood that are dear and priceless. I feel fortunate to have had such wonderful grandparents who were always there supporting my parents in all they endeavors. Have you ever thought when you couldn't recall a family story or experiences you know had to be recounted? And you always tell yourself if only my grandparents had written their experience and stories.

From the stories I was told, I realize that my parents learned their parenting styles and techniques from each of four of my grandparents. I can't help but feel obligated to be thankful to my grandparents for working so hard providing a good life for my parents and teach them to be good people which in turn, I have had the opportunity of learning from my parents. Now, as you can see, I am a little biased, but my parents are caring, loving, and wonderful people who have instilled the morals and beliefs my siblings and I still hold. I always imagine how incredible the link to the present & future would be if only all of their experiences and soul soothing stories were written down on ink and paper.

L to R Eng. Mustafa, Kibrom, Andai, Fitsum, Samson & Isaac during dinner gathering

I have heard that "It only takes three generations to lose a piece of oral family history". In order not to lose these family stories from being passed down

they must be purposefully and precisely written to preserve their accuracy and to best keep the past alive.

L to R Eng. Andai, Fitsum, Samson, Fitsum, Aman, Tewelde, Tesfai & Samuel during Andai's presentation.

As in those who passed, there is a yet untold stories and reasons behind everything we have learned, done and continue doing. How does one became a bioengineer or electrical engineer? How and why does a vegetarian meal get on the dinner table? Why is it that a childhood friend or a dear brother or sister no longer with us?

L to R Eng. Kibrom, Andai, Isaac & Samson.

What compels people to choose the path they do while they were alive? What makes them think of ideas bigger than themselves or respond for the greater good and voluntarily give the ultimate gift of life for the vision of the common good? How they felt and what they said before taking their last breath? While death is difficult, it should truly awake and inspire each one of us to pursue a passion of writing our grandparents, parents and loved ones stories in ways we never thought were possible.

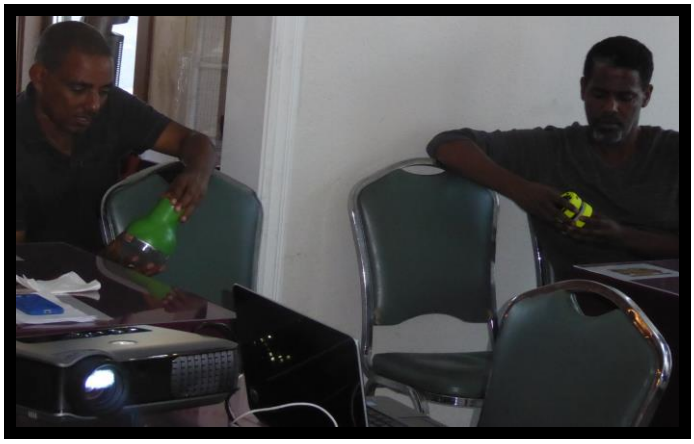
When we are inspired to write, sometimes the stories may be simple, and other times they can be hard, heartbreaking and almost unbearable. Story and memories we have of ours and loved ones are what we all carry with us and we owe it to each other to tell their stories and life experiences that gives meaning to whatever pain they have endured. Their rich and inspiring story should not be limited only to our circle of friends.

L to R Eng. Tewelde, Mustafa, Kibrom, Andai, Samson, Isaac, Fitsum, Aman, & Tsegu during Tewelde's presentation.

Not only should we cherish the memories of our loved ones such as our grandparents but how about those alive who are living ordinary life but at some point of their life they have made extraordinary personal and collective history that most people told them inconceivable, the things most only dream of.

Each of these individual who made personal and collective extraordinary things happen turned himself/herself into a living legend. Their individual and collective stories have a power to inspire, transform and help those who listen/read the stories walk taller and feel stronger in their daily lives. Every one of these living legends is a book waiting to be written. And I believe people are longing for such stories to read it.

During the past half century, each of us have created rich history that need to be told and retold, worthy of every person's time and effort and should be put on books. History is nothing but a series of stories, whether it be individual, family or collective history. Simply stated, there is a need of everybody's experience to be written to spark our imaginations and inspire us to be the individuals we want to be. So, start the process of linking the present and future generation in writing. By telling and writing our personal and collective stories we can motivate others and share our own experience. Stories allow us to express our values and experience as well as having the power to move others.



L to R Eng. Tsegu & Tesfai looking at solar light fixture.

Written stories connect the past and present to the future. If our stories are written, it will generously benefit not only present but also future generations. Our stories and our learning from them honors and respects those we have known. They connect and can awaken future generations to their potential.

L to R Eng. Mustafa, Tsegu, Aman & Fitsum.

You may think you have story that do not matter, that nobody is interested, that you shouldn't be writing about yourself. However, your stories can be a lesson and an inspiration to many and you have a responsibility to give account of who you are and why you do what you do. If you do not write your own stories, who will? The thing about it is that if you don't write your story and those who are dear to you, others will, and they may not write it in the way you like it or should be written.

Written personal history is extremely important. It plays very significant roles in our everyday lives. Our past is our vibrant teacher to achieve greater encouragement over our future. So, let's be captains of our journey that will serve as a model of who and what we are to be, authors of our experiences that that teaches us what to peruse and what to avoid and tellers of our stories that depicts authenticity, truth and a direct reflection of our values before somebody else does it for us which is rarely constructive.

~ Yosief Woldemariam

..... Sense of humor from engineer's prospective

An Engineer and Human resource Manager

Reaching the end of a job interview, the Human Resources Manager asked the young engineer fresh out of university, "And what starting salary were you looking for?"

The engineer said, "In the neighborhood of $100,000 a year, depending on the benefit's package."

The HR Manager said, "Well, what would you say to a package of $200,000 a year, 5 weeks' vacation, 14 paid holidays, full medical and dental, company matching retirement fund to 50% of salary, and a company car leased every 2 years - say,

a red Mercedes?"

The engineer sat up straight and said, "Wow!!! Are you joking?"

And the HR Manager said, "Of course, ...but you started it."

http://engineering-humour.com/engineering-jokes.html

Current Job Opportunities

Companies or Government Jobs	Location & Number	Closing Date
Electronic & Electrical Engineering		
https://jobs.boeing.com/job/kirtland-air-force-base/electrophysics-engineer-scientist-level-5/185/1513791	Electrophysics Engineer/Scientist Level 5 - 1600003465, Kirtland AFB New Mexico	Open Until Filled
https://jobs.boeing.com/job/north-charleston/wire-design-engineer-level-1-2/185/1502485	Wire Design Engineer - Level ½ 1600003275, North Charleston South Carolina	Open Until Filled
https://jobs.boeing.com/job/north-charleston/wire-design-engineer-level-3-4/185/1502495	Wire Design Engineer - Level ¾ 1600003276, North Charleston South Carolina	Open Until Filled
https://jobs.boeing.com/job/herndon/design-and-analysis-engineer-1/185/1502491	Design and Analysis Engineer 1 - 1600003383, Herndon Virginia	Open Until Filled
Manufacturing Engineering		
https://jobs.boeing.com/job/huntington-beach/manufacturing-engineer-level-2/185/1500449	Manufacturing Engineer Level 2 1600003353, Huntington Beach California	Open Until Filled
https://jobs.boeing.com/job/salt-lake-city/tool-engineer-2/185/1513785	Tool Engineer 2 1600003582, Salt Lake City Utah	Open Until Filled
https://jobs.boeing.com/job/oklahoma-city/manufacturing-planning-systems-and-test-level-2-3/185/1389736	Manufacturing Planning Systems & Test - Level 2/3 1600002092, Oklahoma City Oklahoma	Open Until Filled
Software Engineering		
https://jobs.boeing.com/job/albuquerque/software-engineer-level-3-or-level-4/185/1513782	Software Engineering 1600003555, Albuquerque New Mexico	Open Until Filled
https://jobs.boeing.com/job/chantilly/software-engineer-2/185/1508016	Software Engineer 2 - 1600003390, Chantilly Virginia	Open Until Filled
https://jobs.boeing.com/job/st-louis/software-engineer-2-3/185/1502489	Software Engineer 2/3 1600003437, Saint Louis Missouri	Open Until Filled
System Engineering		
https://jobs.boeing.com/job/fairfax/systems-engineer-level-1-or-2/185/1511067	Systems Engineer Level 1 or 2 1600003424, Fairfax Virginia	Open Until Filled
https://jobs.boeing.com/job/fairfax/systems-engineer-level-3-or-4/185/1511066	Systems Engineer Level 3 or 4 1600003425, Fairfax Virginia	Open Until Filled
https://jobs.boeing.com/job/el-segundo/systems-engineer-level-5/185/1513784	Systems Engineer Level 5 1600003579, El Segundo California	Open Until Filled

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If you need an updated information, discussions or have an experience to you would like to share with your fellow professionals feel free to contact us.

You will find us on www.linkedin.com/groups/Alpha-Eritrean-Engineers-Community