



COLLEGE OF PHYSICAL AND BIOLOGICAL SCIENCES (CBPS)

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*" Do you know
what we call
Opinion
in the absence of
evidence?
We call it
prejudice."*

—
Michael Crichton

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Leading the Academic Path, 30 years On



Meet Professor Shem Wandiga, Ag. Director-Institute for Climate Change and Adaptation

What has been your greatest motivation while working and lecturing at the University of Nairobi?

My mind and my students. I realized that teaching is the only profession that allows one to continuously learn, either from his students or his books.

I train my students to a point that I begin to be trained by them before letting them go into the world to shape it with their intellectual knowledge.

What do you ascribe to your high achieving and award-winning positions?

Working for only one institution in my life, University of Nairobi.

When did you join University of Nairobi?

In 1972, when it only had 3,000 students. There was no comparison to the present university capacity, which has over 60,000 students.

What is your role at the University?

I currently head the Institute for Climate Change and Adaptation (ICCA), as an Acting Director as well as being a professor of Chemistry.

You are presently working on a research that could contribute to employment opportunities, what is it about?

The research is about purifying large quantities of water to ensure water safety using a compound that is readily available at the Kenyan Coast.

Why water purification?

The research looks into a problem of providing quality water

for use and drinking, a commodity so scarce in the rural areas of Africa. We are testing changes incorporated into Titania to make it more reactive when placed in a pot and exposed to the sun. At present solar disinfection is generally applied by putting water in a plastic bottle and placing it in the roof top. Much as this process meets its purpose, however, its effectiveness is limited due to the quantity a plastic bottle can hold and the unavailability of plastic bottles in the rural areas.

You have received many awards internationally and one most recently. Please tell us about your latest appointment.

I have been appointed Chancellor of Egerton University, where I also received a recent Doctorate of Science.

What additional positions have you held?

I have been chairperson in various institutions, organizations and member of executive boards. I was appointed chairman of Moi University Council in 2012, and Chairman of Bondo University College, in 2009. Still in 2009, I was elected chairman of United Kenya Club Board of Directors. In addition, I was appointed as a member of the Expert Group on dichlorodiphenyltrichloroethane (DDT) pesticide in 2008.

What intellectual advice can you give to scholars?

For both students and lectures, carry out quality research and publish in high impact journals. If you are pursuing further education, do not only chase for titles, but gain understanding and knowledge in your field of study so as to be recognized in your profession.

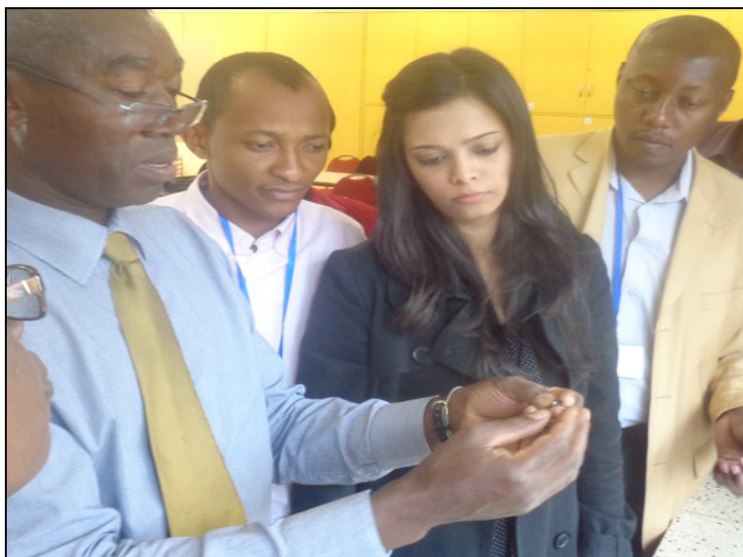
NUCLEAR ENERGY: The Fukushima Experience



The College of Physical and Biological Sciences had the opportunity to host Prof. Yasuo Yamamoto from the Yokohama National university. Prof. Yamamoto came to Kenya with a delegation of eleven students to discuss the challenges of embracing nuclear energy against the backdrop of the Fukushima disaster. The students came to convey the concerns from a section of the Japanese society who are not only concerned about the way Japanese view the future of nuclear energy but how nuclear energy is discussed in emerging economies such as Kenya. Introducing the visitors was Dr. Jan Kiboi, from the College of Biological Sciences. The visitors were a cross-disciplinary team of students from the sciences and humanities. The Kenya Nuclear Energy Board also attended the session with a view to understand the disaster from the perspective of the Japanese. The students gave a four-part presentation on the technical and social considerations for nuclear energy. In the technical presentation they explained the difference between conventional methods of energy generation and generating nuclear energy. Japan has historically had a checkered relationship with nuclear energy. In 1945 the Allied forces dropped atomic bombs on Nagasaki and Hiroshima with devastating consequences. 50,000 people died on impact, but this was just the beginning of the nightmare. People as far as 2.3 Kilometers from the epicenter of the blast suffered burns all over their bodies. The challenge is not only the immediate impact but the radiation effects that continued to be felt 20-30 years after exposure. Effects of radiation include fatigue, vomiting, skin damage

and cataracts. Victims also suffer an increased risk of thyroid cancer. Before the accident, only four people in Fukushima were on record as suffering from thyroid cancer. In 2012, the number had risen to 21 and in 2013, 42 cases were recorded. Half of the population migrated from Fukushima three days after the disaster. Survivors suffered from lack of living facilities and food. To date, they still suffer from discrimination from Japanese from other areas. The main purpose of the students visit was to enlighten Kenyans of the Japanese experience as Kenya marches forth on the path to nuclear energy.

GAS CHROMATOGRAPHY/ MASS SPECTROMETRY WORKSHOP



Professionals being trained on gas chromatography

This year's Gas Chromatography Mass Spectrometry (**GC-MS**) workshop brought together professionals from Africa and beyond. The workshop opened at Jomo Kenyatta University of Agriculture and Technology, on Monday September 2, 2013 and ran for five-days at the **JKUAT** Chemistry Department. Sponsorship was provided by the Royal Society of Chemistry (**RSC**), the Organization for the Prohibition of Chemical Weapons (**OPCW**), and the Pan Africa Chemistry Net-work (**PACN**). Training workshop was facilitated by Dr. Mathias Schaffer, a Senior Scientist at the University of Cologne, Germany and Prof. Antony Gachanja, a Professor in Analytical/Environmental Chemistry at the Jomo Kenyatta University of Agriculture and Technology, Kenya.

REACHING OVER 18,000 READERS THROUGH BLOGGING.



Steve Muthusi, a Senior Technologist in the Department of Chemistry has been blogging for more than two years. He was driven by his desire to help others find their purpose in life. His interest in people has propelled his writing to reach readers both locally and internationally. This has led to him conducting several talks to students, on their innate potential. Stephen attests his growing number of readers to quality content that he writes about, of which he says, one needs to be pas-

sionate and knowledgeable on what they write about. Moreover, a blogger should intensely read on their area of interest so as to write with authority. This is well-proven in his posts, which are backed by philosophical quotes. He advises that even as one quotes different writers' works, they should not let their writing backup the quotes, but should use the quotes to emphasize what they are writing about. His love for reading and writing has contributed to his successful blogging. Nevertheless, he does not discourage those who do not enjoy reading from blogging. He recommends that when someone writes about their passion, that is all that matters.

On his massive readership, now at 18,846, he advises that bloggers should share out their blog titles to friends as well as forums they attend.

As for him, he shares his blog details in any event where he speaks or trains and also uses social media to share his blog-posts.

Tips from Steve on how to go about blogging

Getting to blog

- Do not write for the sake of it. Find out one thing that you are passionate about and write about it.
- Reflect daily and share out with readers what you learn.
- Share out your blog title with others. Use social media too, to share your posts.
- Read on what you write about so as to speak with authority on your subject area.

Benefits of Blogging

- You get to interact and network with a huge numbers of people both regionally and internationally through your posts.
- You can get opportunities through blogging, for example he got training opportunities to different schools.
- People learn from your posts and in the end you get to impact someone's life.
- It is fulfilling to get positive feedback on how your post has helped someone else.
- It is a creative way to socialize.
- It engages the brain in a creative way and enables you to see things in different ways

How can you find what you are passionate about to blog about it

- Find out the things you love.
- Find out what you can do without a struggle. What feels like play. What is effortless to you and does not feel like work.

You can access his blog at: stevemuthusi.blogspot.com

PURITY MAYAKA: REMOTE CROP ADVISORY SYSTEM

One of the major challenges in research and innovation is bridging the research to implementation gap. The community needs to appreciate the relevance of research and innovation or else important innovations that could impact our lives may never see the light of day. In the case of Purity Mayaka, a student at the University of Nairobi School of Computing and informatics, her experience in a chama kicked her grey cells into action and enabled her to develop a solution to a problem that is plaguing many Kenyan Farmers today; accessing information on how to grow exotic crops at the touch of a phone button. The Women's group met and decided to grow exotic crops for sale. Unfortunately, none of the members had the knowledge on how to make the necessary preparations, the result was disappointing and Purity decided to do something about it. She developed a knowledge management system for upcoming farmers that captures information from experts through videos, pictures, documents and notes and disseminates to other farmers through a web and a mobile interface that was displayed at the Nairobi Show.

The Intellectual Property rights of the system have been protected and she is currently in the final stages of knowledge capture and will soon have the system available for use to the public.



SUCCESS THROUGH FAITH AND FOCUS



When Evelyn Auma Oloo completed her fourth form in 1993, she was faced with a tragedy that would have broken her spirit had she not been a strong person. Her father who was not only the breadwinner in the family, but was also a stabilizing force in her life,

passed away suddenly. As the first born in the family, she was forced to look for a job to support her younger siblings. Lady luck smiled on her and she was fortunate enough to get a temporary job as a social worker with a project in Nangina, Western Kenya. Her entire salary went towards her younger sisters' school fees.

In the mean time, a relative found her a job with an advocate. Evelyn thought that her fortunes were about to change. When she went to get her results slip and identity card, she discovered that they were missing. Later, Evelyn was to discover that she had been a victim of identity theft, an acquaintance had stolen the documents and fraudulently acquired a job using the same documents.

Never to be discouraged, Evelyn was soon on her way to Nairobi where she got a clerical job as a sales girl with Bingo Sales. While at this company, inspired by her family's interest in the security sector, she approached the head of security in the company to see if she could get an opportunity. Once again, luck was on her side and she was absorbed. Unfortunately, the company closed down soon after and she was laid off.

In the year 2000, Evelyn joined BM Security and through her determination and hard work, was promoted to a senior guard at the company.

This promotion opened opportunities for her such as training. She was trained at ICIPE in computers and Public relations and at World Vision In NGO Security, Communications, amongst other courses. During this period she also served as a receptionist in the CEO's office, at Savings and Loan, a subsidiary of KCB.

Evelyn worked for six years as a guard before she decided to try her hand at bureau business. She and her husband opened a communications bureau that was doing printing and photocopying. All was going well until 2008 when the bureau was burned down during the Post-Election Violence. She then decided to enroll for a Diploma in criminology at the University of Nairobi. It was during this period that she saw an advert for a guardette at the University of Nairobi. She joined the University in 2009 as she continued with evening classes. Once again, Evelyn applied the hard work and focus that is a part of her character and achieved a distinction in her studies.

At Chiromo, Evelyn began to settle down and focus on her job. She was working under the leadership of Mr. Karemi, the Chief security officer in Chiromo. Her duties included managing the petty cash, report writing, minutes for meetings and investigation of cases at the Chiromo campus.

But Lady luck was not finished with Evelyn yet. Mr. Karemi not only encouraged, but insisted that Evelyn should apply for a Degree course at the University. With support from her supervisor at work, her husband at home and with the strength in character that has come to define her, Evelyn pushed ahead and graduated with a BA in Sociology on the 6th of December 2013.

As a word of encouragement she advises all to have confidence in themselves and to reach for the stars.

Evelyn is especially grateful to God, her husband and her supervisor at work, without whom she would not have succeeded.

STAFF PROMOTIONS

Dr Josephine Kagunda	- Lecturer, School of Mathematics
Dr. Vincent Madadi	- Lecturer, Department of Chemistry
Dr. Njagi Njomo	- Lecturer, Department of Chemistry
Dr. Korir Kipkoech	- Lecturer, Department of Chemistry
Dr. John Wanjohi	- Senior Lecturer, Department of Chemistry
Dr. Fredrick Oduor	- Senior Lecturer, Department of Chemistry
Dr. Albert Ndakala	- Senior Lecturer, Department of Chemistry
Dr. Martin Mbugua	- Senior Lecturer, Department of Chemistry

WESTERN MICHIGAN UNIVERSITY (WMU) VISIT CBPS



Western Michigan University (WMU) visit CBPS as Potential Collaborators on 27th January 2014. The team from Western Michigan University consisted of, Dr. Wolfgang Schlor, Diether H. Haenicke Institute for Global Education, WMU as the team leader and Edwin Martin, Associate Dean, College of Art and Sciences, WMU Gil Sinclair, M.A, Faculty Chair, College of Aviation, WMU, Ms. Cathleen Fuller, Director, International Partnerships and degree Programs, WMU

Suggested areas of collaboration included;

Reciprocal student and faculty mobility, teaching opportunities for staff at the University of Nairobi and Western Michigan University, Linkages with

industries including but not limited to Pfizer, Novartis, Joint research programmes and proposals, Cross disciplinary programmes, Undergraduate partnerships through sandwich, dual or twin programmes in the University of Western Michigan and the University of Nairobi, Online undergraduate and post graduate programmes, Benchmarking of curricula to train wholesome students.

Some interesting Undergraduate and graduate courses offered in Western Michigan University include;

Business oriented chemistry, Aviation Flight Science, Aviation Maintenance Technology, Aviation Management and operations,

Initial collaboration will focus on Chemistry and related courses including;

Fresh Water Sciences and Sustainability studies, Environmental Chemistry, Geochemistry, Nanotechnology, Water Chemistry.

For more details on Western Michigan University Programmes visit

The following links;

<http://www.wmich.edu/>

Department of Chemistry

<http://www.wmich.edu/chemistry/>

Department of Geosciences

<http://www.wmich.edu/geology/>

Department of Computer Science

<https://cs.wmich.edu/>

Department of Physics

<http://tesla.physics.wmich.edu/>

Degree_Programs/Graduate/

Biological Sciences



KAJIADO CHILDRENS HOME VISIT



Staff and students of CBPS visited Kajiado Children's Home on Saturday 26th October 2013 as part of the College's Rapid Results Initiative and also as a Corporate Social Responsibility. The Kajiado Children's home was set up in 1997. It sits on a 5 acre piece of land and caters for orphaned and needy children from 7 divisions of Kajiado District. The Home currently caters for 78 children; 35 boys and 43 girls. Children in the Home range from nursery going (about 5 years) to University students (about 22 years old). The Home has 14 members of staff. Some of the members of staff who visited the home were :The Dean of the school of Physical Sciences, Prof. Lydia Njenga who represented the Principal-CBPS, Directors and Chairmen of Departments and several other members of staff. Student organizations in the College including SONU and ONUSS were also not left out as a sizeable number of stu-

dents joined the members of staff.

A total of 170 people from the College participated. The function was also attended by the Advocate of the Kajiado Children's Home Ms. Lydia Kwamboka Khatete and the Donors of the Home ; Todd Hodgkin, Pede Self and Gaye List from USA. During the visit staff and students of CBPS mingled freely with the children and had a poem, show and dance and even cooked together!

Ms. Catherine Kitonde being one of the staff at the College of Biological and Physical Sciences and a product of the home was very grateful to the home and the University for taking good care of her. She thanked the University and the College for supporting her MSc and PhD, studies. The function was concluded after the donations were handed over to the Management of the Kajiado Children's Home



First year's registration process



Orientation of first years

PICTORIAL COLLECTION FROM KAJIADO VISIT



1



2



3



4



5

PICTURES IN NUMERICAL ORDER

1. Prof. Lydia Njenga presenting donations to the Kajiado Childrens' home.
2. Staff bonding with the children
3. Entertainment from the children at the home
4. CBPS management team being briefed
5. Students and staff preparing a meal

PICTORIAL CONTINUATION

Students' Organizations Training



The College's new bus launch



Literature skit performance during RRI sensitization

Tree planting day

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