



# CBPS News

COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES NEWSLETTER

Vol 4 No. III

## SPECIAL POINTS OF INTEREST:

- Innovation Week has become one of the highlights of the University calendar
- This year the event has gained recognition from the highest level of Government

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## PRESIDENT OPENS UON INNOVATION WEEK

The University of Nairobi second annual Innovation week was officially opened by the President of the Republic of Kenya, His Excellency Uhuru Kenyatta. The Innovation week is the brainchild of the C4D Innovation Laboratory That is housed in the School of Computing and Infromatiocs (SCI).

In his address the President announced that the University of Nairobi will receive an increase of innovation capitation of Ksh. 100 million to cater for the Annual Innovation Week in 2017.

He appealed to other institutions of higher learning to pay key attention to Nairobi Inno-

vation week, so as to start similar initiatives in their institutions. He said that the country is still in need of more innovation in health care, education, financial ser-



success,ö he emphasized. His Excellency expressed the necessity of Government and Corporate organizations support to innovators, by using innovations of the youth instead of outsourcing products and services which are already locally available.

President Uhuru Kenyatta also commended University of Nairobi for steering innovation, saying öthis is a pioneering example. You have shown us a glimpse of what true innovation should look like.ö

The event was also addressed by the Cabinet Secretary Ministry of Information, Communications and Technology, Joseph Mucheru who emphasized the need for

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## PHYSICS DEPARTMENT CLINCHES AWARD



Mr. Bett receiving his award from the Vice Chancellor

The Department of Physics entered two winning exhibi-

tions for the innovation week. The sign language speech translation glove is an innovation that was developed to address the communication barrier between sign language users and non-sign language users. The sign language glove uses sensors mounted on each finger that quantify how much a finger is bent. The glove translates the finger

and hand movement to algorithm that analyzes the data to determine the number or letter that has been signed for use. An inbuilt text to speech library is used to vocalize the signed number or letter. This was developed by a fourth year student by the name of Roy Allela.

The second innovation was the unmanned aerial vehicle

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# PRESIDENT OPENS INNOVATION WEEK



Entrepreneurs present innovative products

From Pg. 1

the innovations to be scaled to the market. The ICT Cabinet Secretary also highlighted the need for partnering with institutions, "Innovation week is a partnership of many different institutions aimed to bring people together as a catalyst for change. Partnership is key, unity is key," said Mucheru.

Mr. Mucheru accentuated Government's initiative to work with partners such as corporate and innovators across the country to ensure innovation businesses grow. "We are growing business

but we are not listing them for people to know them," he challenged.

The Vice Chancellor, Prof. Peter Mbithi, emphasized his management's committed to support innovation as a redefining pillar in society. This will be a key contribution to the acceleration of national development to attain Vision 2030.

Prof. Mbithi communicated the intention of making "Innovation Week" a game changer in the economy.

The Vice Chancellor also highlighted that the University of Nairobi is ranked the best University in East Af-

rica and top 3% among global universities, as released by the Webometrics University Ranking in July 2016.

Cabinet Secretaries, Principal Secretaries, Ambassadors, University of Nairobi Council, Chancellors, Vice-chancellors, Sponsors and Distinguished guests, Innovators, University management, staff members, students and invited guests, were among those present during the opening of Nairobi innovation week on August 3, 2016.

He mentored hundreds of students through their academic careers into successful professions in science

## TRIBUTE TO PROF. J. OCHANDA

From the CEBIB Team

Saturday, May 28, 2016 marked a sad day for the University fraternity following the sudden demise of Prof. J.O. Ochanda - the founding Director, Centre for Biotechnology and Bioinformatics (CEBIB) (2005-2013) based at the CBPS. We take this opportunity to express our gratitude to everyone that offered support in kind to the family following the loss of their patriarch. Prof. Ochanda, a man of profound scientific



The Late Prof. J. O. Ochanda, Founding Director of CEBIB

acumen, left a great legacy and attributes in the bioscience

fraternity. We remember Prof, not only because of his academic prowess but also that he managed to institutionalize the knowledge in Biotechnology/Bioinformatics into the now Centre for Biotechnology and Bioinformatics, and the NEPAD funded Biosciences East and Central Africa hub, based at ILRI. He mentored hundreds of students through their academic careers into successful professions in science and allied fields. Prof's friendly and open approach allowed those under his mentorship to thrive and provided opportunities for individuals to grow in their careers. His demise created a gap which will take a while for the University of Nairobi and the scientific community to fill. His technical know-how and attention to details will always be missed in the higher education sector,

where he served as a reviewer for curriculum developed for various institutions of higher learning. An outstanding character revered of Prof was his love to counsel. This made it easy for him to receive audience and engage in productive conversation with everyone he encountered. Furthermore, Prof engaged in community development through outreach programmes aimed at improving people's quality of life in selected project areas in South Nyanza. He will also be remembered for steering discussions on the controversial debate about introduction of genetically modified *Bacillus thuringiensis* Cotton in Kenya and later analyses of the *Bt* Cotton samples at CEBIB labs. The CEBIB team will miss him dearly!

## MCDI DONATES USD 3000 WORTH OF EQUIPMENT TO CHIROMO CLUB

Millennium Community Development Initiatives (MCDI) has donated cameras and video equipment worth \$3,000 to Chiromo Environmental Awareness Club (CEAC) to enhance publicity on environmental concerns. Club members have already been trained on video editing from MCDI through the trainers Ms. Violet Matiru and Mr. Anthony Mwangi, who trains on video editing and graphic design. The Club will now advance documentation of environmental issues in the community through the Environmental Journalism Program that began in 2015.

Ms. Matiru, a consultant at MCDI said that the students will be advantaged to document environmental issues better because they have the academic background of the environment. "The students will be in a position to combine their environmental academic background with journalistic skills to enhance environmental reporting," said Ms. Matiru. This she said because most of the club members are studying Environmental Science and Natural Conservation undergraduate programme.



Violet Matiru from MCDI with Director SBS making the presentation to CEAC club members

## SBS STUDENT WINS WANGARI MATHAAI AWARD

Ms. Unelker Maoga, a second year student studying Environmental Science at the School of Biological Sciences, University of Nairobi, has won the fourth edition of Wangari Maathai Scholarship Fund. Wangari Maathai Scholarship Fund is a competitive scholarship awarded based on merit and the contribution an applicant makes in their respective communities. This year, 2016, the scholarship was awarded to two students, Ms. Unelker Maoga (University of Nairobi) and Ms. Elizabeth (Kenyatta University) who are also members of Africa Youth Initiative on Climate Change. Having applied the year before and not qualified, Ms. Maoga was determined that this year she would try convince the panel that if she received the funding she would not let them down. One month later after the application, Ms. Maoga was informed that she had been shortlisted. She was later called for an interview in May 2016 at Kenya Community Development Foundation Offices. Representatives from the Rockefeller



Ms. Unelker Maoga—2nd Year Student School of Biological Studies

Foundation, the Green Belt Movement, Kenya Community Development Foundation, Wangari Maathai Institute for Environmental Studies and the University of Nairobi were in her interview panel. Although Ms. Maoga says that the interview was rigorous and nerve wrecking, she felt confident that she had done her part in convincing the panelists that her project was vital to for her community and that she needed funding for her education. In addition to her studies, Ms. Maoga is involved in environmental education in pri-

mary and secondary schools in Kisii, her home County. Here, she gives lectures on climate change, its mitigation and solution strategies. With many farmers in Nyanza having to struggle with irregular patterns of rainfall, Ms. Maoga believes that taking the message of climate change mitigation through planting of trees, is key. The Wangari Maathai scholarship awardee is also involved in renewable energy projects. The project offers climate change solutions in renewable energy. Owing to the fact that a large population of families in Nyamira County are still dependent on kerosene lamps, kerosene is expensive in the long run and harmful to health and the environment. Ms. Maoga's project, which popularizes use of solar energy, is therefore seen as one of the cheapest, clean and most accessible forms of renewable energy to save our environment. She believes that the provision of affordable and durable solar lamps to women groups and church groups, in Kisii County will help to achieve a greener county in years to come.

# 3000 TREES PLANTED AT CBPS



**SBS Students with mentors at Miyawaki planting Exercise**

*At least 10,000 trees have been planted from 2012 to 2016.*

Three thousand trees comprising 19 tree species have been planted at the University of Nairobi, College of Biological

School of Biological and Physical Sciences using Miyawaki method.

This is the fourth year that the trees are being planted in collaboration with Yokohama City University, Mitsubishi Corporation and School of Biological Sciences.

Miyawaki method aims to

restore degraded forests. It involves planting a variety of trees species in higher than normal densities, thus providing an environment for competition of resources which leads to fast vegetation growth. The trees compete for light, nutrients, water and space. Competition to access light leads to enhanced growth, while the species that lack endurance, are eliminated naturally.

At least 10,000 trees have been planted from 2012 to 2016. This comprises more than 16 tree species. The trees planted from 2012 have already reached a mean height of eight meters. This represents a fast growth of tree species facilitated by Miyawaki tree

planting method.

The trees planted have not only beautified the landscape along Prof. Maurice Alala road, which joins College of Biological and Physical Sciences to the University's graduation square and Main Campus, but they have assisted to control floods.

General Manager Mitsubishi Corporation, Nairobi Liaison office, Mr. Masatoshi Wada, confirmed that the first tropical regeneration tree project took place in Mauritius in 1990. The success of Mauritius enabled us to replicate the project worldwide. So far, 1 Million trees have been

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## The East African Cloud Summit

The first East African Cloud Summit organized in collaboration with the University of Nairobi's Inno-

vation Lab, Computing for Development Lab (C4DLab), kicked off with delegates from the Education, Government and Corporate Sector taking the lead in panel discussions on implementing Cloud Technology in the country.

The two-day summit which ran from April 21<sup>st</sup>-22<sup>nd</sup>, 2016 was sponsored by Microsoft Corporation.

The summit brought together stakeholders in

the technology field to deliberate the future of Cloud and constraints of its implementation.

### What is Cloud Technology?

Cloud technology, according to Dr. Tonny Omwansa, Director C4DLab and Senior Lecturer at the University of Nairobi, is the technological capability to share computing resources including software, virtual storage space and computing development tools, through the internet

Technology experts discussed security of data and organizations' confidence in implementing Cloud technology. The experts noted that with empowerment of skills and provision of information, both citizens and organizations will benefit from a cheaper, secure and effective means of accessing data using the Cloud.

In his key note speech, Cabi-

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**Participants in the EA Cloud Summit**

# Miyawaki Tree Planting in CBPS

From Pg 4

planted using the Miyawaki project, affirmed Mr. Wada. Mitsubishi Corporation has been an influential partner since its collaboration with the University of Nairobi. The organization has continuously offered scholarship opportunities to students, from 2009.

Principal College of Biological and Physical Sciences, Prof. Bernard Aduda, commended the support the University has received in ensuring tree coverage is sustained. Prof. Aduda said

that the work can be extended in areas where depletion of trees has occurred. The Principal of the College challenged students to be ambassadors of tree regeneration by using the Miyawaki tree planting skills to regenerate tropical forests.

Director School of Biological Sciences, Prof. Paul Ndegwa, said that the trees represent a natural biodiversity which form a priceless part of our ecosystem. Prof. Ndegwa also pointed out that the risk of losing indigenous tree species has been progressive and is more

real than people are aware of. School of Biological Sciences has undertaken science based research and rehabilitation in Karura forest, Ngong, Aberdare, Marsabit, Mau and Mount Kenya forests.



# The East African Cloud Summit

From Pg 4

net Secretary Ministry of Information Communications Technology, Mr. Joe Mucheru who was represented by Victor Kyalo, Principal Secretary, Ministry of ICT, said that Nairobi is one of the counties that has already embraced Cloud Computing. Mr. Kyalo challenged institutions to advance from academic dialogues and work on enacting Cloud Computing.

### Cloud to lead in Entrepreneurship, Innovations and Cost Effective Infrastructure Development

Vice-Chancellor University of Nairobi, Prof. Peter Mbithi, who was represented by Prof. Timothy Waema, Associate Professor School of Computing and Informatics UoN, officially opened the summit.

In his opening remarks, Prof. Mbithi said that the first East African Cloud Summit would provide an opportunity to lead in driving the agenda in the area of cloud technology.

Prof. Mbithi also revealed that the University of Nairobi was at the forefront in implementing technology. The University Vice-Chancellor highlighted that the regional leading University had already embraced cloud technology, as it had a private cloud and a community cloud provided by Kenya Education Network.

The Vice-chancellor also said that the summit would assist in developing recommendations that will enable the country to effectively invest in human capital, nurture creative entrepreneurs and innovations and create cost effective infrastructure for development.

### Application of Cloud Technology in the Country

During the Cloud summit panels, the Government was urged to provide policy and regulatory framework that will inform organizations where to keep data; whether on public, private or hybrid cloud, depending on data sensitivity.

Dr. Omwansa, emphasised that

Cloud is the future and any organization which will not integrate this technology, will remain behind.

On application of Cloud technology in education delivery, the Government was challenged to facilitate digital content that would standardize quality of education accessed by all students in all counties, as well as use technology to curb examination cheating.

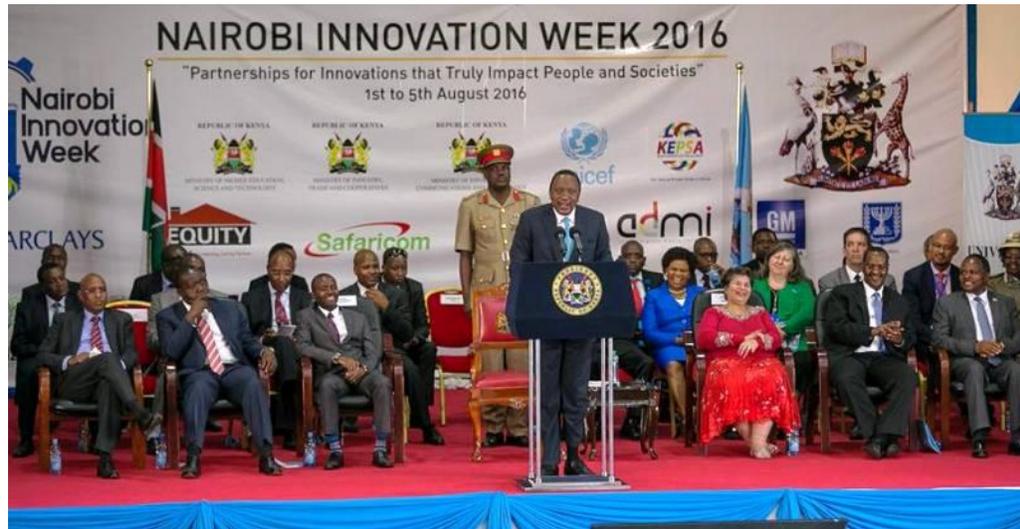
Sectoral case studies of cloud deployment pitched during the summit included *I choose life*, an organization which uses Microsoft's Cloud Service to host its Biometric Student Management Information System. M-Kopa, an organization that provides solar-energy to over 300,000 homes in East Africa, has also implemented Cloud technology.

### National Cloud Strategy Policy

Contd. On Pg 10

## CBPS NEWS PICTORIAL

# Innovation Week Opened by the President



President Uhuru Kenyatta giving his opening speech at Nairobi Innovation week



Winners pose for a picture



Transform Africa Journal Launched at the



Commercializing Innovations Seminar during Innovation Week

## MCDI Donation to CBPS Students



Ms. Violet Matiru AND Antony Mwangi consultants at Millenium Community Development Initiatives signs guest book at School of Biological Sciences

## DP Presents PhD Progress Report



**William Ruto 2-** His Excellency Deputy President William Ruto presented his Ph.D. progress report to the Director School of Biological Sciences, University of Nairobi, Professor Paul Ndegwa and his supervisor, Professor Jenesio Kinyamario, on the impact of human activities on riparian reserves at Saiwa Swamp, Trans Nzoia County in June 14,2016.

## MEMBERS OF ENACTUS STUDENT ORGANIZATION IN ACTION



**ENACTUS:** Members of Entrepreneurial Action Us (ENACTUS) Student Organization with their Patron/Faculty Advisor, Dr. Evans Chimoita from College of Agriculture and Veterinary Sciences (right), President of Enactus, Walter Mayeku (second-right), and Organizing Secretary, Stella Mbogo (second-left), a fourth year Actuarial Science student at the College of Biological and Physical Sciences during a National EXPO of ENACTUS Regional members competition, held at KCB Leadership Centre, Karen.



Children from Ukweli Children's Home, Kasarani show-off their paintings which were facilitated by a donation of paints and paintbrushes from Entrepreneurial Action Us (ENACTUS) student organization.

## ANTI-CORRUPTION TRAINING AT CBPS



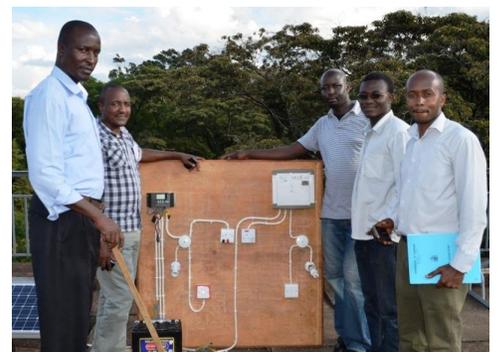
The College of Biological and Physical Sciences held their first Anti Corruption training that was aimed at sensitizing stakeholders in the college to the challenges of corruption and how governance is impacted by corrupt practices

# TREE PLANTING USING THE MIYAWAKI METHOD



Prof. Bernard Aduda, Principal College of Biological and Physical Science, Prof. Paul Ndegwa, Director School of Biological Sciences, Prof. Kazuwa Fujiwara, Professor at Yokohama City University, and Mitsubishi Corporation staff plant a tree during the 2016 Tree planting day using Miyawaki Method

# SPS HOLDS SOLAR TRAINING ACADEMY



Renewable Energy has become a new frontier in business. The Physics department has been working tirelessly to ensure that Kenya has the capacity to meet the challenges that will be faced in meeting the growing demand for this product. To this end, the department regularly holds training for technicians to be able to support the industry

# EAST AFRICAN CLOUD SUMMIT

In the implementation of the National Cloud Strategy Policy the Government was implored to give guidelines on the framework and policies by collaborating with regulatory bodies and the private sector, who are more informed on technological advancement. With this collaboration, then Government can effectively implement service provision closer to the people through use of Cloud.

The summit attracted twenty-five speakers from regional and international industry cloud technology experts and University of Nairobi Cloud Champions including: ICT Director UoN, Mr. Ibrahim Otieno, Prof. Timothy Waema and Dr. Bitange Ndemo, Asso-

ciate Professor UoN and former Permanent Secretary Ministry of Information Communications Technology.

Government and Corporate Industry Technology expert speakers were from Ministry of Information and Communications Technology, Communication Authority of Kenya, Oracle Corporation Kenya, IBM East Africa and CloudHop.

## Index to measure Cloud implementation underway

The summit took place after the just concluded second annual Regional Academic Network on IT Policies (RANITP) organized by University of Nairobi, C4DLab, from 19-20<sup>th</sup> April 2016. RANITP discussed

Africa's readiness for Cloud Computing. Delegates from academia, government and corporates discussed the need to enhance cloud computing and security training in the country. An index to measure implementation and effectiveness of Cloud computing is currently being formulated with a team steered by Dr. Omwansa. Panelists also lauded Government's technology advancement initiative in implementing digital literacy in over 22,000 primary schools during the 2016 Regional Academic Network themed *Cloud Computing and Economic Impact*

The partnership would see both SUNfarming and the UoN benefit in areas of renewable energy generation and food production,



The PV integrated greenhouses

## Department of Physics Sign MOU with German Firm

The Department of Physics has partnered with SUNfarming GmbH, a German solar firm (a subsidiary of Alensys Group, Germany), in development of joint projects on solar PV training and Food and Energy. The partnership deal was

sealed on 30th March 2016 by signing a MoU with the University of Nairobi at the Vice Chancellor's office. The partnership would see both SUNfarming and the UoN benefit in areas of renewable energy (in the area of PV) generation and food production, research in energy engineering, energy economics, agricultural engineering, in areas of materials engineering, network distribution, and power quality. The collaboration has its origin from the already established Solar Academy training program conducted by the Condensed Matter Group (headed by Prof. Bernard

Aduda). It all started in November 2015 after one of the alumni of Solar Academy Ms Jemmimah Anyona recommended us to SUNfarming followed by a visit to SUNfarming's headquarters in Berlin by Dr. Justus Simiyu (Training Coordinator, Solar Academy) in February 2016 as a representative of the University in the delegation of African partners.

The partnership strategies in the area of PV generation are modeled along that the North West University (NWU), Potchefstroom (South Africa) with whom SUNfarming has had a successful partnership. The

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## HIV PEER EDUCATION : A STUDENT'S PERSPECTIVE

Stephen Hawking an English cosmologist and physicist from the 19<sup>th</sup> century rightly said that "The greatest enemy of knowledge is not ignorance; it is the illusion of knowledge." On this Thursday on June 23, 2016, a panel of guest speakers from different walks of life meets a knowledge thirsty group of students from The College of Biological and Physical Sciences. Their goal; HIV AIDS peer education.

Kenya Research Institute representative is first on the podium and in an interactive question-answer format, explains the facts and functions of gender mainstreaming. (A public policy concept of assessing the different implications for women and men of any planned policy action, in all areas and levels). A case study on the Kenyan history reflects how women have been subdued to consistent rights abuse at the same time, shouldering an overwhelming amount of responsibilities. It is not surprising to witness cases of women being ostracized by their families and communities in their attempt to own, acquire, control

or assert property rights over men.

The speaker drew the attention of the participants towards the uproar that bursts out in the social media, against certain commercials that "defy the odds". For example; a popular commercial that aired a woman carrying a condom in her purse, was something that the society could not stomach. Moreover, a brief explanation is given as to why there are just but a few women who make it to the top of their careers as opposed to their male counterparts.

Also covered was a serious health threat impacting Kenya today; the inextricable link between substance abuse and HIV/AIDS infection. Of particular concern is the devastating impact that these twin epidemics have had on the urban youth. In response to this crisis, Stanley Ngara 'King of Condom' from Liverpool Voluntary Counseling and Testing (LVCT) vividly communicates about alcohol related health risks within a community that

embraces alcohol consumption as a cultural norm. Side effects of common drugs abused among the students were highlighted against the rewards of living a drug-free life.

Apart from citing the ABC (Abstain, Be Faithful, Use a



**King of Condom: Creative Delivery of HIV Messages**

Condom) golden rule for HIV prevention, Mr. Ngara narrowed down to the causes of the virus and the preventative measures, paying attention to male circumcision as a way of reducing the risk of infection. Overwhelmingly, the audience admits to the fact that the HIV sensitization is not working at all despite the sensitization

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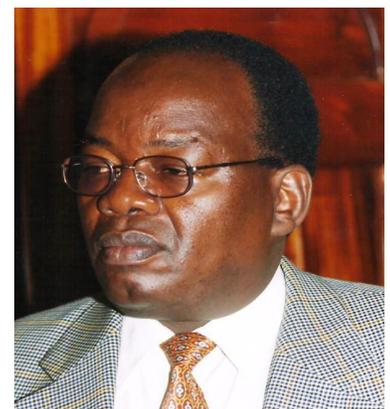
## PROF ODADA CLINCHES KEY APPOINTMENT

Geology Professor, Prof. Eric Odada has been appointed member of the InterAcademy Patnership (IAP) committee. As a scientist in the committee, Prof. Odada will contribute in a three year project set to harness science, engineering and medicine to address Africa's challenges. This will be done by mobilizing African leaders to develop and implement new approaches to address a range of challenges facing individual countries, regions and the continent as a whole. Prof. Odada term was effective from August

1, 2016 and will end on June 30, 2019.

InterAcademy Council-IAP for Research project aims to explore how to effectively use science, engineering and medicine to address important African challenges. During the three year project supported by the Carnegie Corporation of New York, members of the committee will provide strategic guidance regarding implementation of the project. They will also oversee the awarding of seed grants to African academies and

academy partnerships to build on successful efforts of the past decade. In addition, the committee will engage African and non-African leaders, global donor community, industry, academia and civil society organizations through organized forum events. Nairobi will be host to the IAP meeting to be held from 19-21<sup>st</sup> September 2016. CBPS new team takes



**Prof. Eric Odada from Geology Department**

# MAINTENANCE STAFF UNDERGO TRAINING



Principal Addresses Maintenance Staff at Training

At the end of the training the team was equipped with knowledge on changing poor disposal of waste.

The College environmental committee held a training with the maintenance team to deliberate on effective ways to manage waste disposal that arise from scientific departments, which pose a danger to the society. The highlight of the training was obtaining reuse of waste before disposal and importance of separation of hazardous waste from non-hazardous waste. Mr. Francis Juma, Chairman of the College of Bio-

logical and Physical Sciences Environmental Committee tasked the team emphasizing "disposal should always come last. Before you throw something away, think of how to reuse it." Mr. Juma also challenged adoption of recycling of paper to tissue paper, stating "this can be done in

Chiromo campus by our own students." While addressing the maintenance team, the Principal of the College, Prof. Bernard Aduda commended their contributory task in



beautifying the College. This is made evident by every visitor's remarks on the College's scenic environs. The training highlighted disposal methods based on the material being disposed; whether solid, liquid or gas. It also assessed the impact on the method employed in

disposal. At the end of the training the team was equipped with knowledge on changing poor disposal of waste.

Mr. Juma, also trained on ISO quality management, where he informed the maintenance team that ISO is about standards, procedures and processes. Mr. Juma said that to uphold University of Nairobi ISO standards, the team had to ensure focus is on customer satisfaction and

sustainability of environment for future generations. University of Nairobi is ISO 9001:2008 certified. Environmental Committee representatives who were present include Dr. Dennis Kimata (SBS), Mr. Paul Rabala (SCI) and Mr. James Kaoga (ICCA).

## HIV PEER EDUCATION : A STUDENT'S PERSPECTIVE

From Pg. 11  
from an early age.



Sure Condoms Distributed to the students after training

The man of the hour finally made a grand entrance with his scarlet tux accompanied by his signature: the condom cap, hence the name; The King of Condom. The audience was fascinated by his creative look combined with his open and interactive personality. The King of Condom used role play to illustrate the sex chain that exists among people with multiple sex partners.

Aside from that, he gave a report on a study about HIV peer education intervention at the University level that suggests that after a period of two years of on-campus intervention, no change in behavior is evident with

respect to either abstinence or number of sexual partners. A small but statistically significant change in condom attitudes and behavior is reflected accompanied by a large increase in HIV testing. In conclusion, he makes condom use demonstration affirming that the failure of condoms to protect against STD/HIV transmission majorly results from incorrect or inconsistent use rather than product failure.

While enjoying the refreshments offered at the end of the session, comments about the experience are shared, encouraging the speakers to come again. However, a few recommendations advising the team to employ multi-media formats, games and exercises to actively engage the students were also made. A group photo was taken, branding the whole event a success.

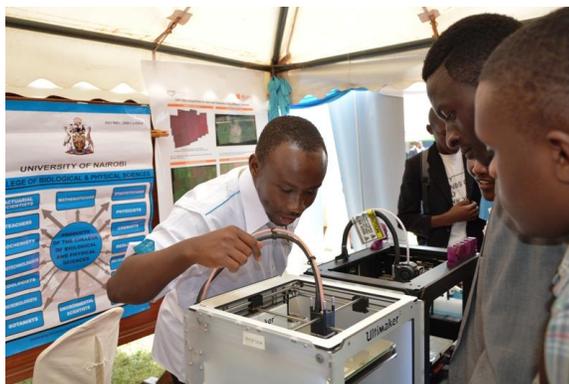
# PHYSICS DEPARTMENT PRODUCE TWO WINNING INNOVATIONS

From Pg. 1

for agricultural use. The vehicle is used to apply pesticides on infected plants only. The drone can either be autonomous or remotely controlled. This will help in reducing the amount of pesticides used and to avoid unnecessary application of the pesticides to uninfected plants. The system is designed and built in the department using locally available material as well as designing and 3D printing parts of the drone. Developed by Arnold Bett

\*The awards that were won were as following:\*

- Sign language to speech translation glove won position 1 in the young innovators category
- Unmanned aerial vehicle (drone) for agricultural use was position 3 in the best exhibitors category.



**Mr. Bett from Physics demonstrating innovations**

## MENEDELY— REFERENCING SOFTWARE FOR SCHOLARS

Mendeley is a free reference manager and academic social network that helps researchers to organize their materials, to collaborate with others online, and to discover the latest research in their field. It has over four million users worldwide. Although its user interface is currently only available in English, its intuitive layout and usability make it popular with researchers everywhere.

By adding references to a library, users are able to keep track of their materials, to organize them as they see fit and read & annotate PDF documents. The Mendeley Citation Plugin then allows users to insert citations using references in their library, setting them out according to specific style rules (choosing from over 7,000 available citation styles). Once a manuscript has been completed,

the Citation Plugin will also generate a full bibliography at the click of a button.

Following a series of trainings by University of Washington & active participation in Mendeley workshops, Michael Anindo from the College of Biological and Physical Sciences was appointed in January, 2016 as the 1<sup>st</sup> and so-far the only Mendeley Advisor, Ambassador and official Mendeley Trainer in Kenya. Michael has since been involved in conducting a series of trainings on Mendeley in a number research institutions and institutions of higher learning in Kenya.

The first Mendeley Training he conducted at the University of Nairobi was on 20<sup>th</sup> May 2016. This training workshop attracted over 160 applicants from the Institute of Climate Change and Adaptation who included both

PhD & MSc students. A survey conducted Post Mendeley Training to the postgraduate students participants indicated great satisfaction and wished they got the training much earlier.

In July 2016, Michael initiated the process of having the University of Nairobi endorsed by Mendeley as a partnering institution and also to acquire the Mendeley Institutional Edition. This will also lead to an allocation of free upgrade of 500 standard user accounts to premium account access.

He has committed to training more staff and students at the CBPS in the access and effective management of Mendeley to improve



**Micheal Anindo—Mendely Ambassador for Kenya**

## Department of Physics and SUNFARMING sign MOU



Dr. Simiyu signs visitor's book in Kilifi with the team

NWU has on its Engineering campus a solar PV training centre with 12 kW grid tie system installed, a further 6 kW grid tie system for demonstration of carport charge centre, and greenhouse. Lately NWU has added 37 kWp into the grid through installation of 3 greenhouses fitted with a total of 150 PV modules, which seen it reduce expenditure on electricity as well as raise revenue from training in PV and energy engineering. A long term goal of the

partnerships SUNfarming has is the joint development of a minimum 20MW PV plant on participating University land to generate electricity to the grid and earn both parties revenue from Power Purchase Agreement with the Government after the formation of a Special Purpose Vehicle for the project at agreed shareholding equity between the University and SUNfarming. From this partnership with SUNfarming the University of Nairobi stands to benefit

in the following ways:

- The setting up of the PV plant training center will make it possible for the University to run advanced training for T3 licensing and increase its consultancy pool in energy matters, and a centre for testing PV standards will develop, particularly in the Department of Physics.
- The availability of scholarship that will expand its research base in areas of energy and food security. Increase of its revenue base

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## UON C4DLAB STARTUP SHORTLISTED IN GLOBAL COMPETITION

*“To catch the reader's attention, place an interesting sentence or quote from the story here.”*

A team from Computing for Development Lab (C4DLab) has been short-listed to pitch their SMS based application, FAMaliA, at the HiiL Innovating Justice Awards to be held at the Peace Place in Hague, Netherlands, in December 2016. FAMaliA innovation aims

to monitor inheritance succession cases in Kenyan Courts. It is among 22 innovations selected under the Family Justice Category, out of 400 applications from Africa and the Middle East.

Mr. Mathew Egeessa, Lead innovator of FAMaliA and Lead Events, Dissemination and Publications at C4DLab confirms that the SMS based application reduces cost on time consumption and finances incurred during monitoring succession of inheritance property. This is because the mobile application empowers an interested

party in a succession case to track the position of the case via SMS.

FAMaliA also sends an SMS notification in the event of cancellation of hearing dates in courts. It also sends notification if there is a missed court session.

In addition FAMaliA sends SMS alerts to interested parties once a succession case is published in the Kenyan Gazette.

Among the categories available in the competition include SME Empowerment, Living Wage, Human Rights, Student Innovation and Family Justice.

Access the mobile application information here: <https://innovatingjustice.com/en/projects/famalia>



Mathew Egeessa presenting his concept to the Vice Chancellor

to transfer inherited prop-

erty empowers an interested

# Kenya at the 57<sup>th</sup> Mathematics Olympiad in Hong Kong



**The Kenya team taking refreshments in Hong Kong**

Kenya sent a team to the International Mathematical Olympiad (IMO 2016) in Hong Kong. This is the first time Kenya has participated in the International Mathematical Olympiad. It was indeed a big honour to be part of this competition which brings together the best mathematical talent from over 100 countries to compete. The contestants were Qu Renyi, Kais Musa, Yash Khapre, Cynthia Migika, Stefan Tesliuc and Victor Momanyi. The team leader and deputy team leader were, respectively, Dr. James Katende and Dr. Jared Ongaro both from the School of Mathematics at the University of Nairobi. The team was sponsored by AMICORP, ACCA Kenya and HACO Industries.

The team was selected after excelling in the second round of the Kenya Mathematics Olympiad which was held on the 5<sup>th</sup> of March 2016 at the School of Mathematics, University of Nairobi. They are students of various secondary schools namely, Rosslyn Academy, Agakhan Academy, Alliance Girls High School, Alliance High school and the International School of Kenya. They underwent a two week enrichment camp at the University of Nairobi from the 28<sup>th</sup> of May to the 11<sup>th</sup> of June 2016.

The team arrived to a very warm welcome in Hong Kong on the 9<sup>th</sup> of July 2016. The event was hosted by the Hong Kong University of Science and Technology (HKUST).

They attended a grand opening ceremony at the Queen Elizabeth Stadium on the 10<sup>th</sup> of July 2016. The first paper was done on the 11<sup>th</sup> of July and the second on 12<sup>th</sup> of July 2016. The team leaders were hosted at the Harbour Grand Kowloon but later on joined the participants at the HKUST.

While the marking and coordination went on the students were taken on an excursion to Disneyland and they had lots fun. They also had a chance to go the Peak and enjoyed the spectacular aerial views of the tall buildings and the hills in Hong Kong. They also interacted with other teams from over 100 countries and have made many friends from these countries.

The team also sampled the local cuisine and had a chance to try out the chop sticks. In particular they tried out the delicious dim sum served in small steamer baskets as well as Chinese tea.

The closing ceremony was held on the 15<sup>th</sup> of July 2016 at the Hong Kong Center for Exhibitions and Conferences. The top three teams were the United States of America, South Korea and China.

The team did the best they could for a first attempt. Even though they did not make it to the medal bracket, it was a very

enlightening experience. The students are highly motivated and are ready to give it a second attempt at the IMO 2017 in Brazil. The whole process was a learning experience and we are now much wiser. A total of 12 African Countries participated and Kenya was ranked seventh among the African countries.

The 58<sup>th</sup> International Mathematical Olympiad (IMO 2017) will be held in Brazil from July 12 to 24, 2017 in Rio De Janeiro. The host Institution will be Instituto Nacional de Matemática Pura e Aplicada (IMPA).

The International Mathematical Olympiad (IMO) is the World Championship Mathematics Competition for High School students and is held annually in a different country. The first IMO was held in 1959 in Romania, with 7 countries participating. It has gradually expanded to over 100 countries from 5 continents. The IMO Advisory Board ensures that the competition takes place each year and that each host country observes the regulations and traditions of the IMO.

Going forward we are looking at much wider participation in the local selection process. This will allow Kenya to show case its talent and educational system on the international scene and provide excellent opportunities for the students to gain exposure and access to admissions to some of the best Universities in the world. It will also be an opportunity for the corporate world to identify and nurture talent and have an excellent pool of future employees.

*The team was selected after excelling in the second round of the Kenya Mathematics Olympiad*

# Department of Physics Sign MOU with German Firm

From Pg 14

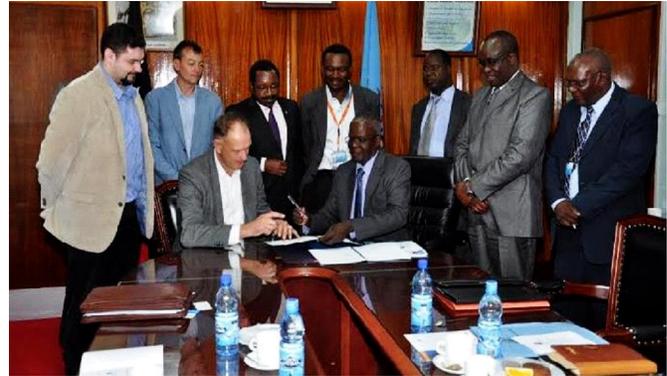
through sale of electricity to the national grid under the PPA scheme.

Since the signing of the MoU between the University and SUNfarming GmbH the following activities have taken place:

- SUNfarming has set up their operational base for implementing the MoU at Chiromo Campus in an office allocated by the Principal, CBPS. Currently SUNfarming and the Department of Physics are working on design of a grid tie PV system for the SPS building starting with carrying out of a comprehensive energy audit for the building.
- Dr. Justus Simiyu and Mr. David Karibe (Senior Technologist, Department of Physics) have participated in the

Food and Energy Master Trainer Program workshop held at the North West University, Potchefstroom, South Africa in April 2016.

- The University of Nairobi team (Dr. Simiyu and Mr. Karibe) has carried out a feasibility and grid study (geotechnical study) on behalf of SUNfarming for design and construction of two 40 MW PV power generation plants in Embu (Masinga Dam) and Kilifi Counties Kenya;
- Environmental Impact Assessment (by Mr. Godfrey Wafula, Lecturer, Chemistry Department) on behalf of SUNfarming.
- The University is set to receive, as a donation from SUNFarming, a Food and Energy demonstration structure which comprises a 5m x 5m greenhouse, 3kW PV grid tie system and hydroponics.



Prof. Henry Mutoro, Deputy Vice-Chancellor, Academic Affairs (seated, right) representing the Vice-Chancellor and Peter Schrum of SUNfarming GmbH signing the MoU between University of Nairobi and SUNfarming GmbH. Looking on from Left to Right: Karel Jooste, Legal Officer - SUNfarming, Gys Niesing - Head of Sales SUNfarming South Africa, Peter Muturi, Public Relations Manager, Dr Justus Simiyu - Coordinator, Solar Academy, Prof. Julius Mwabora - Chairman Department of Physics, Prof. Bernard Aduda - Principal CBPS and Tim Mweseli - Acting Chief Legal Officer, University of Nairobi

## CBPS CARETAKER: GOOD WORK THAT MAINTAINS THE GROUNDS

Chiromo campus is characterized by lush green well kept grounds that are the responsibility of the caretaker's section. For the college grounds to be clean and neat with flowers well trimmed, the caretaker section with only five staff under contract and twenty seven casuals, work extra hard to achieve this. In achieving this, the caretaker ensures that all the staff report to work very early, specifically at 6:00am this is due to the size of the grounds and the nature of chiromo campus

Staff are sensitized on the values of hard work and time management.

Chiromo caretaker section has a good work ethic which is reemphasized by supervision. Casuals are trained on how to perfect the grounds. Flowers

and bushes are normally trimmed by one person, unless there is much to be done, this ensures that the staff develop a culture of responsibility. The college management is also supportive especially college registrar and principle they

have ensured that the staff are provided with the necessary cleaning and Gardening materi-



An example of the well manicured grounds that define Chiromo Campus