



MMUST NEWS

A Weekly Digital Publication of Masinde Muliro University of Science and Technology

Post

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Celebrating Women in Science & Engineering



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- 13th Graduation Ceremony on Friday, 14th December 2018
- 2018 Gala Dinner and Awards, Friday, 21st December 2018
- National Youth Summit- February 2019



Editor's Pen

Dear MMUST Community,



Welcome to the sixth edition of the MMUST *NewsPost*. In this issue, we cover the many activities that have taken place at the University. The signing of the cascaded 2018/2019 Performance Contract by different sections of the University takes centre stage as it outlines our vision as a University of where we want to be. Perhaps the most exciting target, but which requires our utmost dedication and hard work as announced by the Vice Chancellor, is the vision to move Masinde Muliro University of Science and Technology to the top three universities in Kenya by 2021.

We also highlight the colorful event hosted by the African Women in Science and Technology (MMUST Chapter) as they celebrated their first anniversary since inception. We also continue with the second part coverage of the Big Four Agenda thematic areas that MMUST is pursuing. We appreciate the feedback, this time round from the various Campuses, on the role the *NewsPost* is playing in linking them to the Main Campus. We got your back! As always, let us tell our own stories.

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MMUST Council and Staff Sign The 2018/2019 Cascaded Performance Contract

The 2018/2019 Cascaded Performance Contract was signed on Friday, 26th October 2018 by the Chairman of Council, Dr. Jeremy Bundi, the Vice Chancellor, Prof Fredrick Otieno and other key stakeholders of the University.

Dr. Bundi said that Council will ensure that the University has a credible Strategic Plan and Performance Contract that will enable it deliver its desired goals. He urged staff present to adhere to what they sign on their respective Contracts. He further commended the caliber of the teaching staff at MMUST.

The Vice Chancellor, Prof. Fredrick Otieno, said that there was need for payment of bonuses to staff based on excellent performance as incentives to improve the productivity of staff. A Committee was set in place to look into the balancing between the development needs of the University and the reward of employees who

have gone above the set bar.

The signing of Performance Contracts enables the achievement of specific targets by the University for purposes of accountability. They are essential in monitoring and evaluating the progress of the University especially in terms of leadership and socio-economic development. Masinde Muliro University of Science and Technology (MMUST) is expected to undergo evaluation of its Performance Contract by the Office of the President on 30 November 2018. Such an evaluation was last carried out in 2014.

According to Mr. Henry Nathan Wati, the Coordinator, Performance and Evaluation Unit, MMUST shall hold a mock evaluation exercise early November in order to ascertain its status. The mock exercise shall include provision of necessary and required evidence of targets met by the University.



African Women in Science and Engineering (AWSE)-1st Anniversary *"Reaching out to the Girl Child"*

M Masinde Muliro University of Science and Technology (MMUST) was the host of the African Women in Science and Engineering (AWSE) event on 25th October 2018 as they celebrated the first AWSE Western Chapter Anniversary. The event's Theme was **'Reaching out to the Girl Child'**.

The African Women in Science and Engineering (AWSE) is the African Regional version born out of a commitment to domesticate the International Network of Women Engineers and Scientists (INWES)-An international network NGO and partner of UNESCO. The MMUST based AWSE; Western Chapter is one its kind after Kenyatta University, which is an affiliate member of INWES.

Speaking during the event at the University Graduation Square, the Vice Chancellor, Prof. Fredrick Otieno said that there was need to champion for education and economic empowerment of women. The Deputy Vice Chancellor, Professor Josephine Ngaira added that technical colleges

should embrace short courses in order to offer women meaningful skills to earn a living. MMUST as a Technical, Vocational Education and Training (TVET) institution offers Certificate, Diploma and Bachelors programmes geared towards acquisition of relevant skills. She encouraged women to enroll for Certificate and Diploma programmes. The Chief Guest, Hon.Dorice Matere (MCA Kakamega County Assembly), encouraged women to grab the opportunities that come their way because women are still under represented and stereotyped. Ms Lydiah Munika (Vijana Reloaded Initiative) added that 'luck' is what happens when opportunity meets preparedness.

Dr. Teresa Okoth, (Director, Centre for Career Development and Placement), together with Dr. Joyce Kagendo, (Chairperson of Department Mathematics), were honored as MMUST women achievers in Science and Leadership.



MMUST Hosts The University Chaplains Of Kenya Annual Conference

MMMUST played host to the second National Association of University and College Chaplain's Annual Conference from 23rd to 26th October, 2018 at the Bishop Nicholas Stam Pastoral Centre. The Conference was attended by Chaplains from various universities in Kenya, among them, St. Paul's University, Kenya Methodist University, Moi University, Kabarak University, the University of Nairobi, Technical University of Kenya, Co-operative University of Kenya, Mount Kenya University, Daystar University, Laikipia University and Kiriri Women's University. The Chaplains represented a mix of churches and denominations. The Theme of the conference was *'Mainstreaming Chaplaincy in Institutions of Higher Learning'*. The Chaplains articulated the challenges they experience including church politics, resistance to chaplains, accusations of

imposed beliefs from chaplains, old time religion, lack of chaplaincy policies and the internet. However, there were also opportunities that the Chaplaincy met such as health care support, working towards behavior change of students, alleviating spiritual distress, designing religious ceremonies, mediation and reconciliation.

MMUST Vice Chancellor, Prof. Fredrick Otieno graced the event on 24th October, 2018. The VC stated that Chaplains play a special role in universities such as offering moral support to students and staff. MMUST has put its Chaplaincy as a priority because it is a key pillar in the administration of the University.



MMUST Drama Takes Part in the 5th National Workshop For Students And Trainers Of Drama

MMMUST drama took part in the 5th National Workshop for students and trainers of drama which was hosted by Kenya Industrial Training Institute between 17th and 21st October 2018. The Workshop, which is one of its kind, aimed at sharpening drama skills not only for trainers but also students who participate in the annual Kenya National Drama Festivals. The Workshop focused on scripting, directing and production and key ingredients in the preparation for the national festival. Close to 300 participants drawn from five universities and twelve technical training and teachers training

colleges were in attendance.

The three day incubation period was graced by Mr. James Indimuli, the Executive Secretary, Kenya National Drama Festival. Among the Workshop facilitators was Mr. Williat Anyika who facilitated the film category. MMUST was represented by 20 students and 3 members of staff including Mr. G.M. Bombo, Mr. Williat Anyika and Ms. Pauline Adhiambo.

In his keynote address, Mr. Indimuli asserted that the event was an ice breaker towards the beginning of the 2019 drama season whose likely host could be Masinde Muliro University of Science and Technology.

My Big 4 Action Plan

1. Food Security
2. Affordable Housing
3. Manufacturing
4. Affordable Healthcare for all

MMUST In Pursuit of The Big Four Agenda (Part 2)

This is a four part series highlighting the role the Masinde Muliro University of Science and Technology is playing in relation to the Presidential Big Four Agenda

F Following from the fifth issue article on the *NewsPost*, today we bring you the first thematic area where MMUST has set its sights on in pursuit of the Big Four Agenda. The highlighting of these areas comes at a time when the Deputy President, while launching the Endowment Fund at the University Embu, said that universities will receive funding based on their innovation, research and the quality of their graduates in a bid to encourage universities offer relevant courses.

THEMATIC AREA I: INCREASING FOOD SECURITY AND HOUSEHOLD INCOMES

This Thematic area addresses the Agenda on “Ensuring Food Security” with a focus on increasing the production of milk products, fish, potatoes and grain legumes to put food on the table and generate household incomes through the sale of raw and value added agricultural products.

Research Area 1: *Improving Dairy Value Chain Management for Increased Food Security, Health Outcomes and Household Incomes in Kenya*

Several parts of Kenya are faced with the challenge of high population, high unemployment rates among the youth, food insecurity, poor entrepreneurial culture, lack of skilled manpower in dairy technology and agribusiness. This situation has made the otherwise high potential regions for agriculture and agribusiness to languish in poverty.

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The proposed research area aims at equipping Kenyans, particularly the youth, with the approaches for increasing food security, health outcomes and household incomes through dairy production value chain management in Kenya and agribusiness skills development. This will enable the country to create decent employment opportunities and livelihoods for the youth in the dairy production sector, increase dairy production and stimulate the formation of dairy and agribusiness -based SMEs.

Through this initiative, Masinde Muliro University of Science and Technology will support the Kenya Government's efforts towards developing novel community outreach practices and competencies along the dairy production value chain with emphasis on sustainable agricultural value chain management among Small and Medium Enterprises (SMEs), informal sector and small holders. This will in turn improve community livelihoods and support the long-term strategy of expanding the contribution of manufacturing, formalizing the informal sector and increasing the production and market share of Kenyan dairy products and services.

Research Area 2: *The Quikgro Potato: An Early Maturing Multiple Stress Tolerant Potato Crop for Kenya*

The potato is the second most important staple food and cash crop contributing both to food security and the local economy in Kenya. It is grown mainly by small holder farmers in the highland regions (>1500 m above sea level) since tuber development requires cool temperatures. Demand for potatoes is growing and the major challenge is to develop local varieties adapted to agronomic and environmental conditions found at lower altitudes to expand the production areas.

Key to our research is to combine stress tolerance (biotic and abiotic) with the development of Early Maturing Cultivars (EMCs) (reaching full maturity in 60-70 days "the Quikgro potato" compared with over 100 days for most commercial varieties). We expect that EMCs will produce tubers that

bulk quickly in warmer environments, mitigating the effect of short rainy seasons and droughts. EMCs will also be less susceptible to disease (due to a phenomenon called mature plant resistance; MPR) and the shorter growth cycle would allow potato to fit in rotation with other crops such as maize, rice and wheat. Thus this innovation would have multiple benefits for the people of Kenya as it would increase the area under potato production by more than double.

Research Area 3: *Occurrence, Distribution, Molecular Diversity and Management of Virus Stressors on Grain Legumes in Kenya*

Common beans, groundnuts, cowpea, soybeans, green gram and Bambara nuts are the main legumes in the cropping system in some parts of the country particularly western Kenya - one of the food baskets of the country, and a region with about 1/3 of the country's population. Besides providing food, feed and improving soil fertility, these legumes improve the incomes of farmers. Despite their importance, legume productivity is declining and yields are still low (>1.0 t/ha). This is attributed to poor access to improved seeds, declining soil fertility, high incidence of pests/diseases, unpredictable weather and general disincentive due to poor access to markets. These challenges can be addressed if adequate seed amounts of improved and adapted varieties are made available to farmers along with access to effective and affordable agronomic, pest and disease management options.

Although economically important viruses have been found in legume crops elsewhere, virus diversity in some key crops in Kenya is unknown therefore diagnostic tools for such viruses have not been developed. This projects aims to characterize legume viruses in Kenya, develop diagnostic protocols and design proper management methods among small holder farmers.

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Research Area 4: *Developing a Solar-Powered Hatchery for Intensive Culture of Farmed Fish (Aquaculture)*

Despite success in fish farming in some regions of Kenya, a number of challenges have contributed to the slow pace of aquaculture development in other regions. The key challenges include shortage of quality seeds (fingerlings) and feeds, lack of capacity and research, extension and farmer linkage. Local fingerling producers have depended on the wild waters. This has however been a challenge during the cold months of the year when water temperatures drop below optimal conditions and therefore reducing the quantities of tilapia fries produced during that period. Due to frequent power outages and high costs of electricity, hatchery operatives undergo losses as a result of power interruptions, hence the need for solar-powered hatcheries. In addition, low quality fish feeds has also been reported to be a major bottleneck to fish production in both the hatchery and grow out farms (Munguti et al. 2014; Ogello and Munguti 2016). The fish seed and feed disparity has led to increased production costs hence a challenge in sustaining production at community level.

Research in this area will focus on working with fish farmers and hatchery operators on technologies that use solar energy to maintain optimal temperatures for increased efficiency, effectiveness and enhance reproduction of male tilapia fries on a 24hr basis. The research will also target the development of tilapia strains suited for each region and lower the cost of farmed

Research Area 5: *Employing Novel technologies to Control the Development and Spread of Drug Resistance among Bacterial Infections in Swine and Poultry Farms*

Development and spread of antibiotic microbial resistance (AMR) has continued to create a global threat. It has been shown that the use of antibiotics in any setting drives AMR expansions. It has emerged that minimizing the use of these antibiotics may go a long way in reducing exposure of microbes to antimicrobials. This goal nonetheless is dependent on eliminating inappropriate uses and finding other means of preventing infections. In veterinary, the options available to reduce the need for antibiotics in animals have been attempted through the use of non-antibiotic alternative products. Recent studies in Masinde Muliro University of Science and Technology have shown a possibility to apply low doses of iodine-containing Nano-complexes to reverse the sensitivity of bacteria to regular antibiotics and to prevent the emergence and distribution of drug resistant infections. Research in this area addresses the estimation of the efficacy of application of these new medicines in veterinary and farming community targeting drug-resistant *E. coli*, *Salmonella*, *E. faecium*, *Streptococcus aureus* and some others causing the most devastating effect to livestock farming.

Special mention to the following contributing MMUST scholars and researchers; Prof. Dr. William A. Shivoga, (Executive Dean, School of Natural Sciences (SONAS) – Team Leader, Prof. Maurice Omolo (Director Quality Assurance), Prof. Hassan Were (Acting Dean, School of Agriculture Veterinary and Technology (SAVET), Dr. Kelvin Omieno (Acting Dean, School of Computing and Informatics (SCI), Prof Peter Shalo (School of Agriculture Veterinary and Technology (SAVET), Mr Owate Wambayi (Institute of Technology and Vocational Training (TVET), Dr. Anthony Sifuna (School of Medicine and School of Natural Sciences) Dr. Bernard Omogo (School of Natural Sciences) and Isaa Kweyu (School of Public Health and

BUNGOMA CAMPUS MOURNS LEAH NASAMBU MUYITU



SUNSHINE: 11/10/1989

SUNSET: 11/10/2019

Once again, MMUST buried one of its students on Saturday, 27th October 2018 at Chebukaka. Leah Nasambu Muyitu of Bungoma Campus was understaking her attachment at Mwiruti Secondary School. She had been admitted at the Moi Teaching and Referral Hospital in Eldoret since July 2018 but succumbed to diabetes and high blood pressure; a condition she has been battling with for awhile now. Born on 11th October 1989, Leah died on the same day she would have been celebrating her 30th birthday on 11th October 2018. She leaves behind a four year old son.

May her soul rest in eternal peace..



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Gallery: Performance Contract Signing



Gallery: Women in Science 1st Anniversary



Pictorial (Women in Science 1st Anniversary)





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