UBORA: Euro-African Open
Biomedical Engineering
e-Platform for Innovation
through Education

UBORA
First Design School

Hosted by:
Kenyatta University Conference Center

UNIVERSITÀ DI PISA

KENYATTA UNIVERSITY

TARTU ÜLIKOOL · UNIVERSITAS TARTUENSIS · 1632

KTH VETENSKAP OCH KONST

UIRI

AGILEWORKS

Nairobi 11th - 15th December 2017

UBORA: Open Biomedical engineering e-Platform

The UBORA e-Infrastructure

UBORA ("excellence" in Swahili) is a new approach for co-design of innovative solutions to face the current and future healthcare challenges of Europe and Africa. Through the UBORA e-Infrastructure, the biomedical community can generate, exchange, improve and implement creative ideas in Biomedical Engineering underpinned by a solid safety assessment framework. Users can share open data and blueprints of biomedical devices, accompanied by the required procedures for respecting quality assurance, and evaluating performance and safety.

In a nutshell, UBORA couples the open design philosophy with Europe's leadership in quality control and safety assurance, guaranteeing better health and new opportunities for growth and innovation throughout the planet.

UBORA: Open Biomedical engineering e-Platform

## UBORA Design Competition and School

Cornerstones of UBORA's implementation are Design Competitions and Design Schools.

The 2017 UBORA Design Competition has been focused on creating effective and affordable solutions which will contribute to improved <u>child health outcomes</u>. Students with the best ranked projects are invited to attend the Design School at Kenyatta University (Nairobi, Kenya) from 11th to 15th December 2017.

The 2018 UBORA Design Competition will be focused on finding affodable solution to problems related to our <u>ageing society</u>. The related Design School will be in Pisa (Italy), from 3rd to 7th September 2018.

Design School Format

Students will go thought the design process of medical devices compliant to relevant standards , by attending specific classes, workshops and lectures from outstanding speakers. Grouped in teams under the guide of expert mentors, they will prototype a medical device assigned as a challenge at the beginning of the school.
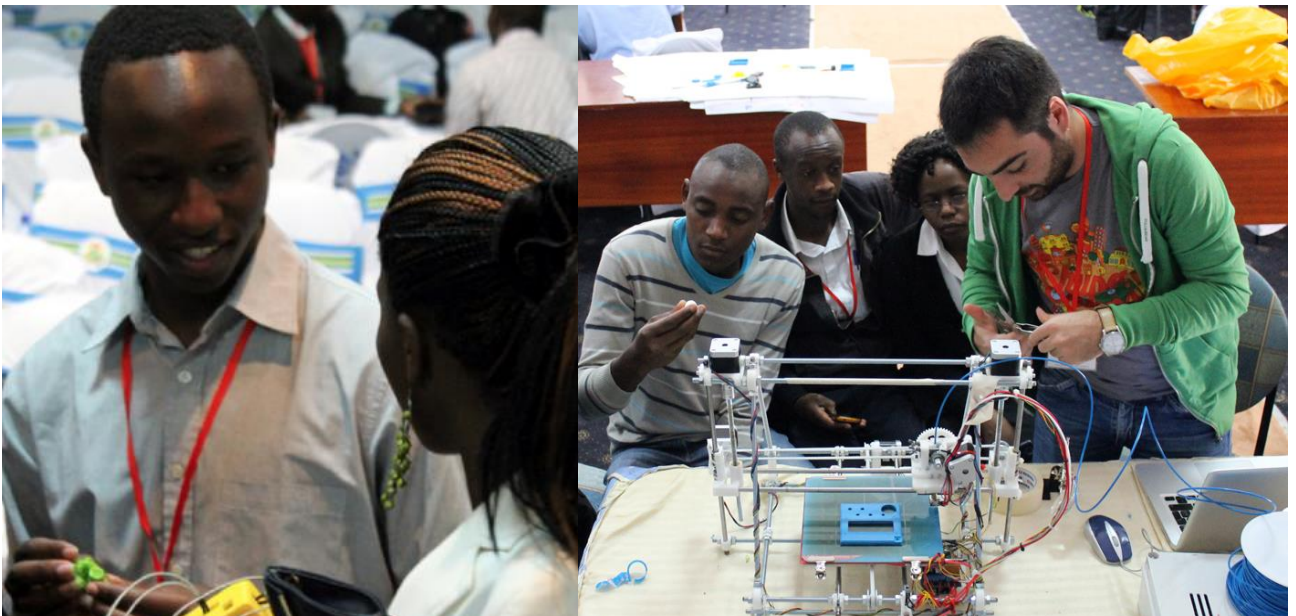
Program at a glance
December 11th - 15th

Time	Day 1	Day 2	Day 3	Day 4	Day 5
8:30 – 9:30	Registration	Class on project development	Class on project development	Class on project development	Hands-on
	Opening ceremony				
9:30 – 10:30	Presentation of the School	Hands-on		Hands-on	
10:30 – 11:00	Health Break				
11:00 – 11:30	Keynote presentations	Workshops	Hands-on	Hands-on	Hands-on
11:30 – 12:30					
12:30 – 13:30	Student's pitch	Keynote presentations	Keynote presentations	Keynote presentations	
	Students assignment				
13:30 – 14:30	Lunch				
14:30 – 15:30	Class on project development	Hands-on	Hands-on	Tour in Nairobi	Closing Ceremony
15:30 – 16:30	Hands-on				
16:30 – 17:00					
17:00 – 17:30	Health Break				
17:30 – 18:30	Workshops	Workshops	Workshops		
18:30 – 19:30					
19:30 – 21:00	Dinner				Gala Dinner
21:00 – 23:00	Hands-on	Hands-on	Hands-on	Hands-on	

Classes, Workshops and keynote presentations

Classes

Classes are intended to present the various steps for designing a medical devices compliant to relevant standards according to UBORA's objectives.

Date	Topic	Responsible
Day 1	CDIO methodologies for medical devices	Andrés Diaz Lantada
Day 2	Standards and regulations on Medical Devices	Alice Ravizza
Day 3	Fabrication technologies for prototyping and manufacturing	Carmelo De Maria
Day 4	Usability of medical devices	Alice Ravizza

Workshops

Workshops are intended to give practical examples on specific topics that can be used by participants for their projects.

Date	Topic	Responsible
Day 1	Programming in Matlab®	Arti Ahluwalia
Day 1	Creativity promotion in Medical Devices	Andres Diaz Lantada
Day 1	Paper Rapid prototyping	Robert Ssekitoleko
Day 2 AM	Tracking movements	June Madete
Day 2 AM	Electronic rapid prototyping	Philippa Makobore
Day 2 PM	Electronic measurements	Mannan Mridha
Day 2 PM	Mass production by injection molding	Juan de Juanes Marquez
Day 3	Arduino and Matlab® for Prototyping Medical Devices	Enrique Chacon Tanarro
Day 3	Image processing	Dawit Haile

Keynote presentations

Keynote presentation by outstanding speakers are intended to highlight the role of biomedical engineering in the context of global health, and identify future research directions.

Date	Topic	Speaker	Institution
Day 1	Relationship between economic development and healthcare technology	Dr. V. Konde	UNECA
Day 1	Clinical Needs and Medical Equipment Assessment	Eng. P. Makobore	UIRI
Day 2	In vitro models for reducing animal testing in development process of medical devices	Prof. A. Ahluwalia	University of Pisa
Day 3	Affordable healthcare	Dr. D. Santorino	CamTech
Day 4	Soft and smart robots in bioengineering	Prof. D. De Rossi	University of Pisa

Mentors

Mentors have the role of guiding groups in the design of medical device assigned as challenge during the school

Name	Institution
Dawit Haile	Addis Ababa University
Muhammad Rushdi	Cairo University
Wasihun Alemayehu	Jimma University
Robert Ssekitoleko	Makerere University
Edwin Khundi	Malawi University of Science and Technology
Daniel Atwine	Mbarara University of Science and Technology
Nuriat Nambogo	Mbarara University of Science and Technology
Mainen Moshi	Muhimbili University of Health and Allied Sciences
Mannan Mridha	Royal Institute of Technology
David Malombe	Technical University of Mombasa
Philippa Makobore	Uganda Industrial Research Institute
Mathew Ocheng	Uganda Industrial Research Institute
Paul Niyitanga	Uganda Industrial Research Institute
Hudson Kagoda	Uganda Industrial Research Institute
Miriam Wegoye	Uganda Industrial Research Institute
Andres Diaz Lantada	Universidad Politécnica de Madrid
Enrique Chacon Tanarro	Universidad Politécnica de Madrid
Juan Manuel Munoz Guijosa	Universidad Politécnica de Madrid
Philip Kangogo Talam	Univesity of Eldoret
Akinniyi Adediran Osuntoki	University of Lagos
Carmelo De Maria	University of Pisa
Licia Di Pietro	University of Pisa
Janno Torop	University of Tartu

Accommodation
and venue

Travel information

- Make sure you have received all **required vaccinations.**

- **VISA**: it is possible to get a visa at the airport on arrival (https://kaa.go.ke/airports/airport-services/immigration-visas/), or an e-visa at the following link: http://evisa.go.ke/evisa.html

- A shuttle bus will be provided from airport to Kenyatta University.


Registration fees

- The UBORA Design School is reserved for students, who participated in the UBORA Design Competition with priority to students with the best ranked project

Features	Total Cost
Accommodation full board	
Access to school facilities	
Tour nearby Nairobi	415 €
Gala Dinner	

- **Payment methods**: Credit Card or Kenyan Shillings

- For the 26 best-ranked projects in the UBORA Design Competition, travel and full-board will be provided for one team member

UBORA Design School
Map of Key locations
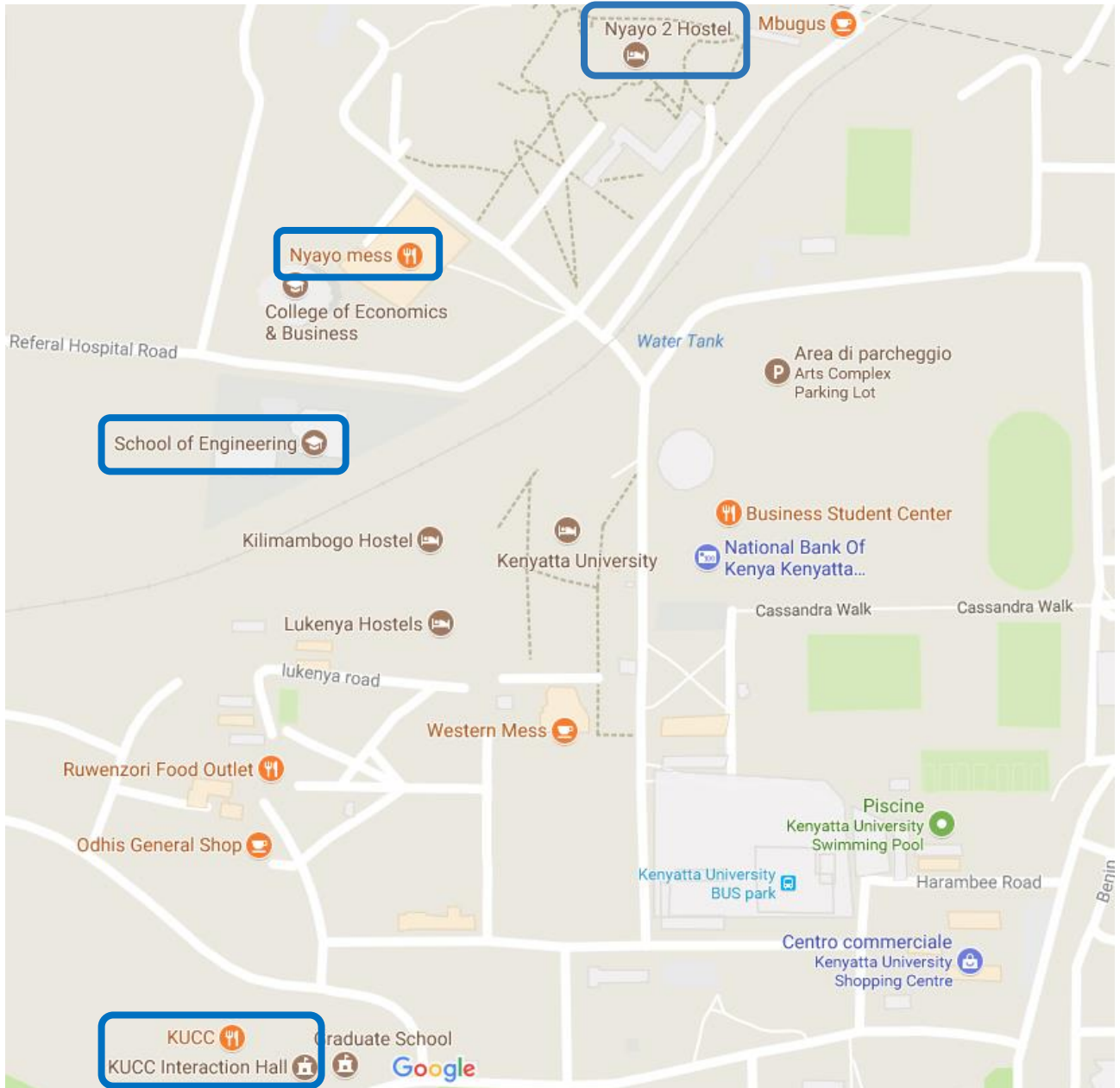
Key:

KUCC - conferencing halls and accomodation for mentors

NYAYO HOSTELS - accomodation for students

NYAYO MESS - breakfast and dinner for students

SCHOOL OF ENGINEERING

Information
UBORA Design School

UBORA organizing Committee

Name	Institution
Arti Ahluwalia	University of Pisa, UBORA Coordinator
Carmelo De Maria	University of Pisa
Carla Papa	University of Pisa
Licia Di Pietro	University of Pisa
Alice Ravizza	University of Pisa/PGG Scientific
Andres Diaz Lantada	Universidad Politécnica de Madrid
Enrique Chacon Tanarro	Universidad Politécnica de Madrid
June Madete	Kenyatta University
Philippa Makobore	Uganda Industrial Research Institute
Arni Leibovits	AgileWorks
Kaspar Kallas	AgileWorks
Kädi Avik	AgileWorks
Karel Golberg	AgileWorks
Mannan Mridha	Royal Institute of Technology in Stockholm
Alvo Aabloo	University of Tartu
Janno Torop	University of Tartu

Local Committee

Name	Institution	Contact
June Madete	Kenyatta University	madete.june@ku.ac.ke
Caroline Ng'ang'a	Kenyatta University	nganga.caroline@ku.ac.ke
Martin Nzomo	Kenyatta University	nzomo.martin@ku.ac.ke

Contact info

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info@ubora-biomedical.org

UBORA

@uborabiomedical

Reviewers Panel

Following people reviewed projects for the UBORA Design competition

Name	Institution
Dawit Haile	Addis Ababa University
Muhammad Rushdi	Cairo University
Wasihun Alemayehu	Jimma University
Robert Ssekitoleko	Makerere University
Edwin Khundi	Malawi University of Science and Technology
Elisabeth Moleneaux	Malawi University of Science and Technology
Daniel Atwine	Mbarara University of Science and Technology
Mainen Moshi	Muhimbili University of Health and Allied Sciences
Mannan Mridha	Royal Institute of Technology
David Malombe	Technical University of Mombasa
Philippa Makobore	Uganda Industrial Research Institute
Andres Diaz Lantada	Universidad Politécnica de Madrid
Philip Kangogo Talam	Univesity of Eldoret
Carmelo De Maria	University of Pisa
Licia Di Pietro	University of Pisa
Carmelo De Maria	University of Pisa
Alice Ravizza	University of Pisa / PGG Scientific
Paolo De Simone	University of Pisa / Azienda Ospedaliera Universitaria Pisana
Janno Torop	University of Tartu

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