

**UNIVERSITY OF NAIROBI  
COLLEGE OF HEALTH SCIENCES  
SCHOOL OF MEDICINE  
DEPARTMENT OF MEDICAL PHYSIOLOGY**

**ANNUAL REPORT 2014**

**Introduction**

The Department of Medical Physiology is located on the Chiromo Campus, (off Riverside Drive), University of Nairobi. It is part of the School of Medicine, College of Health Sciences.

The department offers the following courses in medical physiology: BSc (intercalated), MSc, and PhD. It also provides teaching in medical physiology for MBChB, BPharm, BDS, BSc Nursing, BSc MLST, MSc Nursing, and MMed degree programs offered by the College of Health Sciences. In addition it offers service course for the College of Agriculture and Veterinary Science for BSc FND degree.

**Academic Staff and Designation**

Professors	2
Associate Professor	2
Senior Lecturer	5
Lecturer	7
Tutorial Fellows	0
Total	16

**Staff Appointments and Promotion**

Name	Gender	Title	Comment
None			

**Staff retired, on leave of absence, or services terminated.**

Name	Gender	Title	Comment
Nilesh B Patel	M	Associate Professor	Sabbatical
Paul Gichu Kioy	M	Associate Professor	Leave of absence
Mr. J. G. Kang'ethe	M	Senior Technologist	Retired
Ms Mary Kimani	F	Senior Technologist	Retired

**Academic programmes**

**Undergraduate Programs**

BSc Intercalated Honours Medical Physiology

**Graduate Programs**

MSc Medical Physiology

PhD Medical Physiology

### Number of students admitted into each undergraduate and graduate programs

BSc Intercalated	3
MSc	4
PhD	1

### Number of students graduated

BSc Intercalated	2
MSc	0
PhD	0

### Student performance in other degree programs

Degree	Code	Pass	Fail	i/c	Total
MBChB	HMP 100	259	85	37	381
	HMP 200	331	6	7	344
BPharm	UPC 103	60	23	4	87
	UPC 203	66	2	2	70
BDS	VMP 100	28	5	9	41
	VMP 200	25	1	0	26
BSc Nursing	HNS 100	77	3	7	67
	HNS 100	56	40	9	95
BSc Nursing e-learning		68	4	5	77
BSc (MLS&T)		35	2	5	42
MMed General Surgery		13	0	0	13
MMed Anaesthesia		18	0	4	22
MMed ENT Surgery		7	0	0	7
MMed Orthopedic Surgery		15	0	0	15

### Number of students discontinued on academic grounds

None

### Completed research projects and degrees in the Department of Medical Physiology

Student	Degree	Project	Supervisors
Kinuthia Dennis Gacigi H31/2275/2011	BSc (I)	Antidiarrheal effects of freeze dried extract of Bidens biternata (Lour) Merr	Dr. Peter Waweru, Dr. Anne Muriithi

		and Sheriff.	
Chiuri Karima Wandia H31/36773/2010	BSc (I)	An investigation of the arrhythmogenic effects of chronic administration of freeze-dried green coffee bean extract.	Dr. F. Bukachi, Dr. Peter Waweru

### **Ongoing postgraduate research projects**

Student	Student no	Degree	Project	Supervisor
Benson Muriuki		PhD	A QSAR and selectivity-index guided filtration and optimization of some antimycobacterial leads for TB drug candidates	Dr. J. K. Gikunju, Jomo Kenyatta University of Agriculture and Technology, Kenya  Prof. Midiwo Jacob Ogweno, University of Nairobi, Kenya  Dr. Paul Mungai Mbugua, University of University, Kenya

### **Department Publications**

#### **Book**

1. Bentivoglio M, Cavalheiro EA, Kristennson K, Patel NB. (2014) Neglected Tropical Diseases and Conditions of the Nervous System. Publisher: Springer

#### **Articles**

1. Adegu JW, Muriithi A, Bukachi F. (2014) Effect of Momordica charantia aqueous leaf extract on the isolated mammalian heart. African Journal of Pharmacology and Therapeutics. 3:62-66.

2. Teresa N. Kiama, Rita Verhelst, Paul M. Mbugua, Mario Vaneechoutte, Hans Verstraelen, Benson Estambale and Marleen Temmerman (2014). Characterisation of the vaginal microflora of human immunodeficiency virus(HIV) positive and negative women in a sub-urban population of Kenya. *African Journal of Biotechnology*, Vol. 13(9), pp. 1075-1085.
3. John Mwonjoria, Joseph J. Ngeranwa, Hellen N. Kariuki, Suppression of nociception by *Solanum incanum* (lin.) Diclomethane root extract is associated anti-inflammatory activity. *The Journal of Phytopharmacology* Volume 3, Issue 3 (May-June issue)
4. Lowther K1, Higginson IJ, Simms V, Gikaara N, Ahmed A, Ali Z, Afuande G, Kariuki H, Sherr L, Jenkins R, Selman L, Harding R.A. Randomised Controlled Trial to Assess the Effectiveness of a Nurse-Led Palliative Care Intervention for HIV Positive Patients on Antiretroviral Therapy: Recruitment, Refusal, Randomisation and Missing Data. *BMC Research Notes* 09/2014; 7(1):600. DOI: 10.1186/1756-0500-7-600.
5. Charles Besley, Hellen Kariuki, Marie Fallon. A Pilot Study Patient-Held Pain Assessment Tool in Palliative Care Out-Patients Attending a Rural Kenyan Hospital. *Palliative Medicine* 0269216314536947, first published on June 9, 2014 as doi:10.1177/0269216314536947.
6. John Mwonjoria, Joseph J. Ngeranwa, Helen N. Kariuki, Charles G. Githinji, Micah N. Sagini, Stanley N. Wambugu. A Review Paper; Ethnomedicinal, phytochemical and Pharmacological aspects of *Solanum incanum* (Lin) *International Journal of Pharmacology and Toxicology*, 2 (2) (2014) 17-20.
7. Mutiso SK, Rono DK, Bukachi F. Relationship between anthropometric measures and early electrocardiographic changes in obese rats. *BMC Research Notes* 2014, 7:931
8. Kimani S, Moterroso V, Morales P, Wagner J, Kipruto S, Bukachi F, Maitai C, Tshala-Katumbay D. Cross-species and tissue variations in cyanide detoxification rates in rodents and non-human primates on protein-restricted diet. *Food Chem Toxicol.* 2014 Apr;66:203-9.
9. Kimani S, Moterroso V, Lasarev M, Kipruto S, Bukachi F, Maitai C, David L, Tshala-Katumbay D. Carbamoylation correlates of cyanate neuropathy and cyanide poisoning: relevance to the biomarkers of cassava cyanogenesis and motor system toxicity. *Springerplus.* 2013 Dec 2;2:647. doi: 10.1186/2193-1801-2-647.
10. Kimani S, Sinei K, Bukachi F, Tshala-Katumbay D, Maitai C. Memory deficits associated with sublethal cyanide poisoning relative to cyanate toxicity in rodents. *Metab Brain Dis.* 2014 Mar;29(1):105-12.

11. Ochomo E., Bayoh N.M., Kamau L., Atieli F., Vulule J., Ouma C., Ombok M., Njagi K., David Soti D., Evan Mathenge E, Lawrence Muthami L, Kinyari T, Subramaniam K, Immo Kleinschmidt I, Martin James Donnelly M.J. and Charles Mbogo C. Pyrethroid susceptibility of malaria vectors in four Districts of western Kenya. *Parasites & Vectors* 2014, 7:310

#### Conferences/Workshops/Courses attended

1	Dr. T. Kinyari	Implications of insecticide resistance (IIR) project national coordinators meeting. WHO. Nairobi, Kenya	27th-31st January 2014
2	Dr. T. Kinyari	University of Nairobi HIV Fellowship Curriculum Development Workshop, Naivasha, Kenya.	June 15th - 21st 2014
3	Dr. F. Bukachi	European Society of Hypertension (ESH) / International Society of Hypertension (ISH) meeting in Athens, Greece	June 2014
4	Dr. Hellen Kariuki	School of Pharmacy curriculum review, Nairobi, Kenya.	19 -20th June 2014
5	Dr. T. Kinyari	Kenya Coordinating Mechanism Global Fund Retreat 2014	July 9th-12th 2014
6	Dr. F. Bukachi	Brainstorming on Heart Rate & Beta Blockers meeting, Bologna, Italy	Sept 2014
7	Dr. Hellen Kariuki	Association of commonwealth Universities Gender conference, Nairobi, Kenya.	1st September 2014.
8	Dr. Hellen Kariuki	Association of Commonwealth Universities. Training of Trainer (ToT) workshop on Leadership and Management Training for Women in Higher Education, Nairobi, Kenya	2-5th September 2014.

9	Dr. Peter Mwangi	Pharmacy Curriculum review, Naivasha, Kenya.	22-26 September 2014.
10	Prof. Nilesh B. Patel	CARTA Supervisors Workshop, Johannesburg, South Africa.	24-28 September 2014
11	Dr. Hellen Kariuki	15th World Congress on Pain, Buenos Aires, Argentina.	6-11 October 2014
12	Dr. F. Bukachi	South African Heart Association meeting, Durban, South Africa	Oct 2014
13	Dr. Hellen Kariuki	4th Kenya Hospices and Palliative Care Association National Conference, Loico Regency Nairobi	12-14th November 2014
14	Prof. Nilesh B. Patel	Behavioral Bioassay in Neuroscience: From Invertebrates to Small Mammals, Nairobi, Kenya.	4-13 <sup>th</sup> December 2014.
15	Dr. Hellen Kariuki	IASP Council Meeting, Mannheim, Germany.	10-12 December 2014.
16	Dr. T. Kinyari	Scale up of Fionet Deployment in KEMRI's Insecticide Resistance Research Project	2014

### Ongoing Research Projects

Dr. T. Kinyari	Global Fund Malaria Round 10 Project Siaya Gem Ugenya Districts (AMREF Kenya and Ministry of Health Division of Malaria Control)	
Dr. T. Kinyari	Service Availability Responses Assessment Mapping (SARAM) - Nairobi and Central Regions (WHO-Kenya Country Office and Ministry of Health	

	Division of Health Information Systems)	

### **Outreach and community service activities**

Brain Awareness Activity “Ubongo Campaign” Pwani University, Kilifi, Kenya. 16-17 October 2014. Prof. Nilesh B. Patel

### **Teaching and research equipment purchased**

Computer Laboratory Grill Doors
Digital Hematocrit centrifuge
Microscopes (6 pcs)
Otosopes (2)
Ophthalmoscopes (2)
Plasma screens for main lab (2)
Laboratory stools (60)

### **Staff in Department of Medical Physiology**

	<b>Name</b>	<b>Designation</b>
1	Prof. Owino Okongo	Professor
2	Prof. Kihumbu Thairu	Professor
3	Prof. Nilesh B. Patel	Associate Professor
4	Prof. Paul Kioy	Associate Professor
5	Dr. Paul Mungai Mbugua	Senior Lecturer
6	Dr. Anne Muriithi	Senior Lecturer
7	Dr. Fred Bukachi	Senior Lecturer
8	Dr. Teresa Kiama	Senior Lecturer
9	Dr. Hellen N Kariuki	Senior Lecturer
10	Dr. Frank Waweru	Lecturer
11	Dr. Mujahid Din	Lecturer
13	Dr. Edwin Otieno	Lecturer
14	Dr. Teresa Kinyari Mwendwa	Lecturer
15	Dr. Michael Muriithi	Lecturer
16	Dr. Peter Waweru	Lecturer
17	Dr. Charles Githinji	Lecturer
18	Mr. Charles Kinyungu	Chief Technologist
19	Mr Jacob A Owiti	Senior Technologist
20	Mr. Charles K. Nzivo	Senior Technologist
21	Ms. Juliet N. Ndungu	Senior Technologist
22	Mr. David K. Wafula	Technologist
23	Mr. Martin B. Kaburia	Technologist
24	Mr. Fredrick O. Bwana	Cleaner Grade II
25	Mr. David M. Horo	Animal Attendant Grade III

26	Ms. Rosemary M. Muindi	Secretary Grade A
27	Ms. Hellen N. Nyangoya	Secretary Grade B
28	Mr. Bonface O Ochola	Junior Technologist
29	Ms. Maureen W. Waweru	Junior Technologist
30	Mr. Joseph Moseti	Technical Assistant Grade II
32	Ms. Monica Onguka	Technical Assistant Grade II