

# CURRICULUM VITAE

## PERSONAL INFORMATION

NAME: DR. JUMA GERALD, BSc. MSc. Ph.D  
MARITAL STATUS: MARRIED  
NATIONALITY: KENYAN  
DATE OF BIRTH: MARCH, 1972  
RELIGION: CHRISTIAN

## CONTACT ADDRESS

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## ACADEMIC BACKGROUND

**2010: PhD-** (BIOCHEMISTRY), JKUAT- Kenya  
**2005: M.Sc-** (BIOCHEMISTRY), JKUAT- Kenya  
**1998: B.Sc (Hons) -** (BIOCHEMISTRY & CHEMISTRY), JKUAT – Kenya

## CURRENT EMPLOYMENT/ DUTIES

Lecturer- Department of Biochemistry - College of Health Sciences University of Nairobi  
Co-ordinator -Medical laboratory Sciences and Technology and MSc Nursing – UoN  
Chief executive officer: Clinical Industrial and Biochemical Consultancy (CIBCU) unit

## AWARDS

2013: Research grand ( Kshs 900, 000) for the development of simple and inexpensive kits for the diagnosis of typhoid fever in patients infected with salmonella typhi  
  
2012: Research grand (Kshs 250, 000) for the development of simple and inexpensive kits for the diagnosis of Salmonella infections: Deans Committee Grand – University of Nairobi.

### **2006-2009 IRD/ICIPE Doctoral research grant:**

Lepidopteran Insect-Plant Associations: Evaluated the basis of host recognition and acceptance and the relevance of host plant biochemical cues to host affiliation by *Busseola fusca* larvae. Further investigated the genetic sub-structuring of *B. fusca* populations relative to host plant use.

**2003-2005 IRD/ICIPE Research grant (Master degree course):** Lepidopteran Insect-Plant Associations: Role of plant metabolites in host selection and oviposition by *Busseola fusca* (Fuller) (Lepidoptera: Noctuidae). In-depth study of plant volatile and surface metabolites of selected host plants that mediate location and oviposition of gravid moths.

**1994-1998:** Kenya government scholarship (B.Sc degree course).

### **CURRENT RESEARCH ACTIVITIES**

1. Research on the development of simple and inexpensive assay techniques for the diagnosis of various bacterial diseases
2. Research on emerging diseases of public concern focusing on Environmental toxin and human reproduction
3. Research on the interactions between *Busseola fusca* (Lepidopterous stemborer) and Gramineaceous host plants: Role of plant biochemical and physical cues in feeding and oviposition behaviour and the genetic sub-structuring of larval populations in relation to host use.

### **KEY RESEARCH TECHNIQUES AND METHODS AT DISPOSAL**

Gas Chromatography (GC); Gas Chromatography-Mass Spectroscopy (GC-MS); Gas Chromatography-Electroantennograph Detection (GC-MS- EAD); High Pressure Liquid Chromatography (HPLC), Molecular techniques - RNA/DNA isolation, PCR, Protein purification techniques-Electrophoresis, Absorption spectroscopy Techniques, Bioassays, Proposal write up, execution and data management.

### **FUTURE RESEARCH INTERESTS**

Development of simple and inexpensive diagnostic kits for bacterial diseases. Research on emerging diseases of public concern focusing on Environmental toxin and human reproduction; Bio-prospecting of medicinal plants; Molecular and cell biology; DNA and RNA labelling, purification and analysis, cDNA synthesis, nucleic acid amplification and detection methods including PCR, Use of RNA and DNA fingerprinting techniques for species identification and screening. Northern and southern blotting techniques, DNA sequencing,

bioinformatics tools, cell and Applied clinical works including tissue culture techniques, ELISA, flow cytometry, in vitro human liver culture systems tissue engineering technologies and bioremediation by biotechnology.

### **TEACHING EXPERIENCE**

**Teaching:** Nine years in tertiary institutions and 9 years in the university.

### **Academic supervision:**

Successfully supervised 4 undergraduate students in their respective projects.

Currently supervising 5 postgraduate masters students and 2 Ph.D students

### **Publications**

1. Juma G., M. Thiongo, L. Dutaur, K. Rharrabe, F. Marion-Poll, B. LeRu, G. Magoma, J.-F. Silvain, and P.-A. Calatayud, (2012). Two sugar isomers influence host plant acceptance by a cereal caterpillar pest. *Entomologia Experimentalis et Applicata* **128: 93-98**
2. Juma, G., Chimtawi, M., Ahuya, P.O., Njagi, P.G.N., Le Ru, B., Magoma, G., Silvain, J.-F. & Calatayud, P.-A. (2008). Distribution of chemo- and mechanoreceptors on the antennae and maxillae of *Busseola fusca* larvae. *Entomologia Experimentalis et Applicata* **128: 93-98**.
3. M. Obonyo, F. Schulthess **G. Juma**, B.D. Wanyama, B. Le Rü and P.-A. Calatayud, (2008). Location, acceptance and suitability of lepidopteran stemborers feeding on a cultivated wild host-plant to the endoparasitoid *Cotesia flavipes* Cameroon (Hymenoptera: Braconidae). *Biological Control* **45: 36-47**.
4. P.-A. Calatayud, **G. Juma**, P. G. N. Njagi, N. Faure, S. Calatayud, S. Dupas, B. Le Rü, B. Frérot, G. Magoma and J.-F. Silvain, (2008). Differences in mate acceptance and host plant recognition between wild and laboratory-reared *Busseola fusca* (Fuller). Mate acceptance and oviposition in wild and laboratory-reared *Busseola fusca* (Fuller) (Lepidoptera: Noctuidae). *Journal of Applied Entomology* **132:255-264**.

### **INTERNATIONAL CONFERENCES ATTENDED AND PAPERS PRESENTED**

1. **March 2014:** A five day Training workshop on research and project grant proposal writing organised by University of Nairobi enterprise and services limited at Chiromo conference centre, University of Nairobi.

2. **September, 2013.** Proposal writing workshop for the International Mixed Laboratory "Climate and Agroecosystem Resource in East Africa" (CLAREA). School of Physical Sciences, University of Nairobi, Chiromo campus. Conference organised by IRD-East Africa and its partners in East Africa
3. **February (2008):** Presented a paper on Antennal gustatory sensilla of *Busseola fusca* (Lepidoptera: Noctuidae) larvae potentially involved in host plant evaluation. *Arusha - Tanzania*. Semio-08 Meeting:
4. **July-August 2007:** Presented a poster on the Distribution of chemo- and mechanoreceptors on the antennae and maxillae of *Busseola fusca* (Lepidoptera: Noctuidae) larvae. *Uppsala- Sweden*. 13<sup>th</sup> Symposium on insect-plant relationships (SIP 13):
5. **October 2005:** Presented results on Differences in ovipositional responses between wild and laboratory-reared *Busseola fusca* (Lepidoptera: Noctuidae).

*ICIPE*: International conference on lepidopterous cereal stemborers in Africa.

#### **REFEREES**

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