



## **Dr Richard Okoth Oduor**

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### **RESEARCH INTEREST**

- To use modern technologies including genetic engineering to improve crop yield and enhance biomass for biocommodities as well as genetically improving local medicinal plants for increased production of therapeutic secondary metabolites.

### **CURRENT EMPLOYMENT**

**2011 Jan - date**      **Kenyatta University, Nairobi, Kenya.**  
*Senior Lecturer, Department of Biochemistry and Biotechnology*  
**Duties include:** lecturing, innovation, research, publication, mentorship and supervision of both undergraduate and postgraduate students.

### **EDUCATION/TRAINING**

**2009 Feb-2011 Feb**      **Pfizer Global Research & Development, United Kingdom**  
*Postdoctoral Research Associate (in Drug discovery). Sponsored by UNICEF/UNDP/World Bank/WHO-TDR.*

**2010**                      **Blackford Institute, United Kingdom**  
*Diploma in Forensic Sciences (NCFE accredited)*

**Aug 2005- Feb 2009**      **University of Cape Town, Cape Town, South Africa**  
*PhD in Molecular & Cell Biology*

**2002-2005**                **Kenyatta University, Nairobi, Kenya**  
*Master of Science in Biotechnology*

- 1998-2002**                    **Kenyatta University, Nairobi, Kenya**  
*Bachelor of Science in Biochemistry*
- 1992-1996**                    **Alambo Lakeside Secondary, Siaya, Kenya**  
 O-Level (K. C. S. E)
- 1984-1992**                    **Kanyaboli Primary School, Siaya, Kenya**  
 Basic Education (K. C. P. E)

### **ACHIEVEMENTS AND AWARDS (LAST 3 YEARS)**

- 2011**                    Awarded **the best oral presenter** by African Network for Drugs and Diagnostics Innovation (ANDi), in Addis Ababa, Ethiopia
- 2011**                    Awarded **equipment grant by Pfizer, Sandwich, UK**
- 2010**                    Awarded the Keystone scholarship to attend the Keystone symposium on **Plant abiotic stress tolerance, water and global agriculture** held in Colorado, USA between 17<sup>th</sup> - 22<sup>nd</sup> Jan 2011
- 2010**                    Awarded the Pfizer Travel grant to attend the **3<sup>rd</sup> ANDI** (African Network for Drugs and Diagnostics Innovation) conference held in Nairobi, Kenya between 10<sup>th</sup> -14<sup>th</sup> October 2010
- 2010**                    Awarded the Monsanto Travel Grant to attend **Gordon Research Conference on SALT & WATER STRESS IN PLANTS** held in Les Diablerets, Switzerland between 13<sup>th</sup> -18<sup>th</sup> June 2010
- 2009**                    Awarded the UNICEF/UNDP/World Bank/WHO-TDR Fellowship
- 2009**                    Winner of African Network for Drugs and Diagnostics Innovation (ANDi) Best Poster Presentation Contest, in Cape Town, SA
- 2009**                    Winner of Pfizer Best Science of the month contest
- 2009**                    Patent holder (WO/2009/060402) Plant promoters of the XVSAP1 gene

### **ADDITIONAL TRAINING**

- 2011**                    **Basic Skill in Teaching Methodology and Course Examination, KU**
- 2011**                    **Environmental Impact Assessment Auditor, NEMA accredited, Lead expert**
- 2010**                    **Medicinal and computational Chemistry course** by Pfizer, Sandwich, UK
- 2010**                    **Biobook and SIGHTS training** by Pfizer, Sandwich, UK
- 2010**                    **Safety training for level 3 Laboratories (CAT 3)** by Pfizer, Sandwich, UK
- 2009**                    **Radioactivity training** by Pfizer, Sandwich, UK
- 2008**                    **Biosafety training** by International Centre for Genetic Engineering and Biotechnology (ICGEB) in Cape Town, South Africa
- 2008**                    **Journalism (Media Science Communication Course)** by University of Cape Town, South Africa
- 2008**                    **Market driven Innovation training** by Venture solutions, Cape Town, South Africa
- 2008**                    **Innovation and Development training** by the Southern African Nordic Centre (SANORD), Cape Town
- 2008**                    **Writing Centre Consultancy training** by University of Cape Town, South Africa
- 2008**                    **ENSEMBL Genomics and Proteomics training** at University of Western Cape, Cape Town, South Africa

### **MEMBERSHIPS and ACTIVITIES**

- Member of Technical Committee, Kenya Accreditation Services (KENAS)**  
**Project reviewer, The Maize Trust, South Africa**

**Member of Technical Committee**, African Cancer Foundation  
**Member of Forensic Technical committee**, Kenyatta University  
**Member** of Biochemistry Society of Kenya (BSK)  
**Member** association of Africa Biotechnology network for Africa (ABNETA)  
**Member of University of Cape Town Alumni**  
**Member of Kenyatta University Alumni**

#### **RECENT CONFERENCES/WORKSHOPS ATTENDED**

- 2011** Invited speaker, Dahlem Centre of Plant Sciences, Freie University Berlin, **Berlin, Germany**  
**2011** 4<sup>th</sup> African Network for Drugs and Diagnostics Innovation congress, in **Addis Ababa, Ethiopia**  
**2011** Value chain addition in science research, ASARECA, Entebbe, **Uganda**  
**2011** Keystone Symposium on Plant abiotic stress tolerance, Water and Global agriculture, Colorado, **USA**  
**2010** Gordon Research Conference on Salt & Water Stress in Plants, Les Diablerets, **Switzerland**  
**2009** 6<sup>th</sup> European Congress on Tropical Medicine & International Health, **Verona, Italy**  
**2009** 2<sup>nd</sup> African Network for Drugs and Diagnostics Innovation (ANDi), **Cape Town, SA**  
**2009** Pfizer Global Research and Development poster presentations, Sandwich, **Kent, UK**  
**2008** Gordon Research Conference on SALT & WATER STRESS IN PLANTS, **Montana, USA**  
**2008** 1<sup>st</sup> All Africa Biotechnology Congress on Biotechnology, **Nairobi, Kenya**  
**2008** ICGEB Biosafety workshop, **Cape Town, South Africa.**  
**2008** SANORD Innovation and Development workshop, **Cape Town, South Africa**  
**2008** ENSEMBL Genomics workshop, **Cape Town, South Africa**  
**2007** Bio2Biz conference, **Cape Town, South Africa**  
**2007** The Rockefeller Conference, **Maputo, Mozambique**

#### **CURRENT STUDENT SUPERVISION**

**Miccah Songelael Seth** *Title:* Genetic transformation of farmer preferred tropical maize varieties and inbred lines using drought tolerant genes isolated from *Xerophyta viscosa*. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **PhD in progress**

**Wilton Mbinda** *Title:* DEVELOPMENT OF TRANSGENIC drought tolerant SWEET POTATO (*Ipomea batatas*) using genes isolated from *Xerophyta viscosa* through *Agrobacterium tumefaciens* MEDIATED TRANSFORMATION. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **PhD in progress**

**Pauline Asami.** *Title* *Agrobacterium*-mediated transformation of pigeonpea (*Cajanus cajan* L. millsp.) adapted to East and Southern Africa with *CryIac* gene for pod-borers resistance. Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya. **MSc in progress**

**Kahiu Serah Waithira** *Title:* Biochemical and antimicrobial characterization of antibiotics from Actinomycetes isolated from soils obtained from Juja area of Central Kenya, from termite guts and termite nests. Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology. Nairobi, Kenya. **MSc in progress**

**Otieno O Eric.** *Title:* Role of SDF-1 $\alpha$  and MIP-1 $\beta$  function/promoter polymorphism in regulating susceptibility to severe malaria anemia in children from western Kenya. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **MSc in progress**

**Steven Otieno.** *Title:* Analyses of expression pattern of RCP1 and 35S promoters in association with nematode infection in Plantain. Department of Biochemistry and Biotechnology, Kenyatta University, Nairobi, Kenya. **MSc in progress**

**Mercy Liharaka Kidaha.** *Title:* Characterization and bioactivity determination of wild guava (*Psidium guajava*) accessions in Shimba hills and Yala swamp in Kenya. Institute for Biotechnology Research, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya. **MSc in progress**

## **RESEARCH OUTPUT**

- Seth M S, Bedada, L T, Mneney, E. E, **Oduor R O** and Machuka J S (2012). *In vitro* regeneration of selected commercial Tanzanian open pollinated maize genotypes. *African Journal of Biotechnology* 11(22): 6043-6049
- Oduor et al (2011).** Africa Must Seize the Prospects of Genetic Engineering to Improve Crop Productivity. Institute of Biology, *Dahlem Centre of Plant Sciences Series of Seminars, Berlin, Germany*
- Oduor et al (2011).** High throughput screening to identify novel anti-trypanosomal leads targeting glycogen synthase kinase 3 of *Trypanosoma brucei*. *Forth ANDi conference*. Addis Ababa, Ethiopia
- Oduor, R. O.;** K. Ojo, K. K.; Williams G. P.; Bertelli, F.; Mills, J.; Maes, L.; Pryde, D. C.; Parkinson, T.; Van Voorhis, W. C. and Holler, T. P. (2011). Trypanosoma brucei Glycogen Synthase Kinase-3 Target for Anti-trypanosomal Drug Development: A Public-Private Partnership to Identify Novel Leads. *PLoS Negl Trop Dis* 5(4): e1017. doi:10.1371/journal.pntd.0001017
- Oduor et al., (2011).** Africa Must Seize the Prospects of Genetic Engineering to Improve Crop Productivity, *Institute for Biology Series of Seminars, Dahlem Centre of Plant Sciences (8<sup>th</sup> -12<sup>th</sup> Oct)*
- Oduor RO,** Seth MS, Bedada L, Iyer R, Thomson JA, Maina R and Machuka J (2011). Plant Genetic Engineering is no longer a “Western Technology” in the sub-Saharan Africa.. *Keystone symposium on Plant abiotic stress tolerance, water and global agriculture* held in Colorado, USA between (17<sup>th</sup> - 22<sup>nd</sup> Jan ).
- Oduor, RO;** Iyer, R; Machuka, J and Thomson, JA (2010). Africa must seize the prospects of biopharming. *Third ANDi conference*. Nairobi, Kenya (10<sup>th</sup> -15<sup>th</sup> Oct).
- Oduor, RO;** Iyer, R; Machuka, J and Thomson, JA (2010). Plant genetic engineering: a useful tool for addressing drought stress in sub Saharan Africa. *Gordon Research conferences on salt & water stress in plants*. Les Diablerets, Switzerland (13<sup>th</sup> 18<sup>th</sup> June).
- R. O. Oduor,** G. Williams, F. Bertelli, J. Mills, L. Maes, D. Pryde, K. Ojo, W. Van Voorhis, B. Ramirez, S. Nwaka, M. Witty, M. Perros and T. Holler (2009). Trypanosomal Glycogen Synthase Kinase 3: a potential drug target for Human African Trypanosomiasis. *European Journal of Tropical Medicine & International Health*, Late breaker supplement **Vol 14 (2): 16-17.**
- R. O. Oduor,** G. Williams, F. Bertelli, J. Mills, L. Maes, D. Pryde, K. Ojo, W. Van Voorhis, B. Ramirez, S. Nwaka, M. Witty, M. Perros and T. Holler (2009). Trypanosomal Glycogen Synthase Kinase 3 is a potential drug target for Human African Trypanosomiasis. *Second ANDi conference*. Cape Town, South Africa.
- Oduor, R. O. (2009).** Functional analyses of the novel stress-inducible XvPsp promoter isolated from *Xerophyta viscosa*. **PhD Thesis.** Department of Molecular and Cell Biology, University of Cape Town, South Africa.
- Oduor, R. O,** Machuka, J. and Thomson, J. A. (2008). *Agrobacterium tumefaciens*-mediated transformation of maize for drought tolerance. *Gordon Research Conferences on salt & water stress in plants*, Big Sky, Montana, USA (31<sup>st</sup> Aug - 5<sup>th</sup> Oct).
- Oduor, R. O,** Machuka, J. and Thomson, J. A. (2008). Maize improvement via *Agrobacterium tumefaciens*-mediated transformation for drought tolerance. *First All Africa Congress on Biotechnology*, Nairobi, Kenya (22<sup>nd</sup> -26<sup>th</sup> Sept).
- Oduor, R. O,** Machuka, J. and Thomson, J. A. (2007). Development of transgenic drought tolerant maize. *Third General Meeting on Biotechnology, Breeding & Seed Systems for African Crops conference*, Maputo, Mozambique (26<sup>th</sup> -29<sup>th</sup> March).

**Oduor, R. O**, Njagi, E. N. M, Ndung'u, S and Machuka, J. S. (2006). *In vitro* Regeneration of Dryland Kenyan Maize Genotypes Through Somatic Embryogenesis *International Journal of Botany* **2 (2)**: pp 46-151.

**PATENT**

**Oduor, R. O**, Iyer, R, Mackuka, J. and Thomson, J. A. (2009). Plant promoters of the *XVSAPI* gene. World Intellectual Property Organization Patent no. Patent No. **WO/2009/060402**.