

KENNEDY KIRIIRA GACHOKA, PhD

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CURRICULUM VITAE

CAREER ASPIRATION To become a leading scholar in my chosen area

OBJECTIVE To contribute to training, capacity building and R4D at institutional and community-based level.

PERSONAL INFORMATION Kenyan, born in April 1976, married, fluently speaks and writes English, Kiswahili, and Portuguese

EDUCATION **Doctor of Philosophy in Animal Science (Entomology), 2010**
Federal University of Goias, Brazil
Coursework and thesis with teaching assignments at undergraduate level
TWAS/CNPq-sponsored South-South International Cooperation Programme aimed at the acceleration of professional development of young scholars in developing countries

Masters of Philosophy in Entomology, 2004
University of Ghana, Legon, Ghana
Coursework and thesis
DAAD-sponsored Structured Masters programme that also included seminars, symposia, workshops, method courses and soft skill training

Bachelor of Science (Biological Sciences – Botany and Zoology Option), 2000
Jomo Kenyatta University of Agriculture & Technology, Kenya
Coursework and dissertation

Secondary and primary schools certificates
Njiiri High School, Kenya
Kenya Certificate of Secondary Education (1994)

Muthiria Pri. School, Kenya
Kenya Certificate of Primary Education (1990)

EXPERIENCE AND ACHIEVEMENTS **Senior Lecturer, School of Pure and Applied Sciences, Department of Biological Sciences (Meru University of Science and Technology - MUST) January 2011 to date**

Responsibilities:

- Serving as Academic Adviser for B.Sc undergraduates in the Department of Biological Sciences
- Assessment of students on industrial attachments
- Together with the Departmental team, developing and implementing an academic plan and performance that implement the Department's plans in line with the University's Strategic Plan, and achieving relevant targets.
- Serving in various committees and handling a range of student academic matters or other relevant assignments as allocated from time to time
- Research and preparation of draft research proposals for funding agencies
- Student industrial attachment coordination.

Director, Income Generating Unit (IGU) November 2018 to date

Responsibilities:

- Planning, establishment and development of all income generating activities in the University
- Management of University commercial facilities and all income generating activities
- Preparation of concept plans and business plans for all income generation activities in the University for approval by University Management Board (UMB) and Council
- Provision of strategic direction on improvement of performance of University income generating activities
- Formulation of operating and financial policies and guidelines for all income generating units in the University and presentation of the said guidelines for approval by UMB and Council.
- Overall management of day-to-day Directorate functioning
- To mobilize resources to build University revenue base
- Review of recommendations from departments regarding the optimum utilization of production units based in departments for training, research and production activities.

Appointments to University Organs

- 1st Dec, 2011 to 18th Oct, 2012: Acting Director of Research, MUST
- 1st Dec, 2011 to 31st Dec, 2014: CoD, Department of Biological Sciences, MUST
- 24th May, 2012 to date: Member, ISO Steering Committee, MUST
- 3rd Sep, 2012 to 31st Dec, 2014: Member, Board of Post Graduate Studies, MUST
- 13th Jun, 2013: Member, Organising Committee for Horticultural Association of Kenya (HAK) Workshop, 3rd – 7th December 2013 at MUST main campus
- 3rd Nov, 2013: Chief Returning Officer, Students Association of Meru University annual elections
- 31st Jan, 2014: Chairman, Graduation Sub-Committee for the Chancellor's Room
- 22nd Oct, 2014: Member, Education for Sustainable Development (ESD) Policy Review Committee; Member, Research Policy Review Committee; Member, Public Lecture Policy Review Committee.
- 19th Jan, 2015 to date: Member, Innovation and Intellectual Property Rights Committee, MUST
- 13th Feb, 2015 to date: Member, Collaboration, Linkages and Exhibitions Committee, MUST
- 6th Oct, 2016: Internal research proposals evaluator, MUST
- 6th Nov, 2016: Internal Curriculum Reviewer (PhD, Food Science and BSc Animal Health and Production) MUST.
- 14th Jan, 2017: Secretary, Organising Committee for International Conference on University – Industry linkages, 4th – 6th October 2016 at MUST.

Appointments to External Organs

- Member of Secretariat, 1st Conference on Sustainable Management of Water Resources in Mt. Kenya Catchment Zone, a joint initiative by Kimathi, Chuka and Meru Universities, 2012
- 10th Dec, 2012: Panel Member, Open & Distance Learning Subject (External Referee), Kenya Methodist University.
- 20th Feb, 2015 to date: Interim Vice-Chairman, Kenya DAAD Scholars Association Mt. Kenya Region Alumni Chapter
- 10th Feb, 2016: Member, Organising Committee for International Conference on Higher Education, 10th – 12th February 2016 at Karatina University
- **14th May, 2017: External Examiner, Department of Pure and Applied Sciences, Kenya Methodist University.**

RESEARCH AREA

Entomology and Crop Protection

RESEARCH LINE

Biology, taxonomy and IPM of agricultural pests

RESEARCH PROJECTS

Morphological characterization of sweetpotato whitefly populations in Meru County, Kenya.

Status: Complete

Biological characterization of sweetpotato whitefly populations in Meru County, Kenya.

Status: Complete

Seasonal dynamics of whitefly, *Bemisia tabaci* (Gennadius) (Homoptera: Aleyrodidae) biotypes in a complex tropical cropping system. Post-doctorate research.

Status: Complete

Chemical and biological characterization of pheromones of *Amblyomma cajennense* (Fabricius, 1787) (Acari: Ixodidae). PhD Thesis research August 2007 to August 2010.

Status: Complete

Host suitability of two biotypes of *Bemisia tabaci* (Gennadius) (Homoptera: Aleyrodidae) on some common weeds in Ghana. M. Phil. Thesis research July 2002 to July 2004.

Status: Complete

Evaluation of the feasibility for using the fungus *Metarhizium anisopliae* for the biological control of adult *Anopheles gambiae* Giles mosquitoes. B.Sc. project 1999 (in collaboration with ICIPE). *Status:* Complete

Potential use of constructed wetlands in complementing conventional sewerage systems in mitigating problems of water pollution (in collaboration with researchers from Meru, Kimathi and Chuka Universities).

Status: Prospecting for funding

Center for Management and Safe Use of Agrochemicals (in collaboration with researchers from Meru, Kimathi and Chuka Universities).

Submitted to: ACE II - Eastern and Southern Africa Higher Education Centers of Excellence Project

Status: Unsuccessful

GRANTS AND AWARDS

2017 MUST/Ministry of Education, Science and Technology: 4th MUST Internal Call for Research Proposals, ≈USD 10,000

2014 MUST/Ministry of Education, Science and Technology: 2nd MUST Internal Call for Research Proposals, ≈USD 10,000

2012 National Council for Science, Technology and Innovation: The Science, Technology And Innovations (ST&I) Grant, Post-Doctorate Research Grant, ≈ USD 10,000

2008 Brazilian National Council of Research (CNPq) Grant, Doctorate Research Grant, ≈ USD 10,000

2004 DAAD Sponsorship and Research Grant for M.Sc. research, ≈ USD 5,000

MOUs NEGOTIATED

Formed part of the teams that negotiated the following MOUs:

2019 Meru University of Science & Technology and Meru National Polytechnic on collaboration in training, research and extension.

- 2012 Meru University College of Science & Technology, Dedan Kimathi University College of Technology and Chuka University College on joint water resources management project collaboration.
- 2011 Meru University College of Science & Technology and University of Michigan on joint Kenya Demographic Health Survey project

GRADUATE SUPERVISION

2014 to date:

Title of the PhD thesis Project: Synergistic evaluation of selected plant extracts on potency of botanical formulations against the maize weevil, *Sitophilus zeamais* (Motsch.) (Coleoptera: Curculionidae).

PhD Candidate: Anne Michura Jerotich Garry, Chuka University.

Status: On-going

2014:

Title of the Masters thesis Project: A model of unsteady blood flow through an inclined circular rigid tube under the influence of inclined magnetic field.

MSc Candidate: Vincent Kyunguti Mwanthi, MUST.

Status: Complete

2019:

Title of the Masters thesis Project: Molecular identification and quantification of natural fruit pulp in reconstituted juices.

MSc Candidate: Collins Tombito Khagali, MUST.

Status: On-going

Title of the Masters thesis Project: Molecular identification and characterization of *Legionella pneumophila* in industrial water from selected regions in East Africa.

MSc Candidate: Samuel Kamau Maina, MUST.

Status: On-going

UNDERGRADUATE SUPERVISION

2016:

Title of the Research Project: Determination of nutritional value of five common edible insects.

BSc Candidates: Michael Omondi, Julian Ntoruru, Purity Musau; MUST.

Status: Complete

2017:

Title of the Research Project: A survey of insect species' diversity in selected Orders within Meru University of Science and Technology.

BSc Candidates: Vincent Kipkurui, Samson Mwikabe, Evelyn Chepkorir; MUST.

Status: Complete

Title of the Research Project: Optimization trial on the light regime for the fecundity of the black soldier fly (*Hermertia illucens*) from a standardized population of adult flies.

BSc Candidates: Sylvia Nyamanga, Suleiman Mlingo, Faith Gatiiria; MUST.

Status: Complete

2018/19:

Title of the Research Project: Insecticide susceptibility of local whiteflies (*Bemisia tabaci* and *Trialeurodes vaporariorum*) to three common insecticides.

BSc Candidates: Olambo Dorothy, Victor Bogecho, Edna Atai; MUST.

Status: Complete

Title of the Research Project: A survey of common arachnid and rare insect orders in Meru University of Science and Technology.

BSc Candidates: Cynthia Jepkosgei Bittok, David Okoth Oji, Junesharon Kinoti, Esther Momanyi, Chemutai Cynthia, MUST.

Status: Complete

CURRICULUM DEVELOPMENT

I have actively participated in drafting the following curricula for MUST:

- Ph.D Entomology
- M.Sc. Entomology
- M.Sc. Microbiology
- B.Sc. Biotechnology
- B.Sc. Environmental Science and Natural Resource Management
- B.Ed. Science
- B.Sc. Biochemistry
- Bachelor of Science (review)

OTHER WORK EXPERIENCE

IPM Development Manager (Flamingo Flowers South Africa Pty Ltd) March to July 2007

Responsibilities:

- Development of an Integrated Pest Management (IPM) system at Flamingo Flowers South Africa based on successful models in Kenya.
- Establishment of new guidelines on variety-specific crop scouting after thorough review of crop protection issues in conjunction with the growers.
- Compilation of weekly spray programmes and offering advice on pesticide compatibility and natural enemies integration with the aim of reducing chemical usage.
- In-charge of on-farm small scale trials of specific products in the local market and making recommendations thereof.
- Development of IPM working manual collating local information and experiences as a reference.
- Capacity-building, offering refresher courses while manipulating the courses to suit the staff cadres and the crop (chrysanthemums).
- Preparation of professional data and presentations for management, visitors, auditors and clients.
- Daily on farm 'train as you go' work.

IPM Trainer & Coordinator (Dudutech Kenya Ltd) January 2005 to February 2007

Responsibilities:

- Assisting training manager in market research and liaison, including typing mailshots, collation of information, drafting and filing of reports.
- Assisting in the development of promotional activities and publications, including website improvement.
- Development and updating of high quality audio-visual and written training aids (videos, CD photo library and course manuals).
- Delivering training courses to horticultural farmers and commercial growers in different areas of relevance e.g. safe and effective use of agrochemicals, IPM, composting, pesticides & fertigation aspects.
- Training of trainers on design and implementation of Farmer Field Schools and subject matter areas mentioned above.
- Preparation of draft reports for external accreditation bodies and funding agencies as required by them.
- Occasional consultancy services in IPM, European fresh produce regulations & recommended crop production protocols on behalf of company.

PUBLICATIONS

Publications in peer-reviewed journals

MWANTHI, V.; MWENDA, E. **GACHOKA, K.** Velocity Profiles of Unsteady Blood Flow through an Inclined Circular Tube with Magnetic Field. Journal of Advances in Mathematics and Computer Science, 24(6): 1-10, 2017

GACHOKA, K. K.; LOULY, C. C. B.; FERREIRA, L. L.; FERRI, P. H.; SILVA, A. C.; BORGES, L. M. F. Chemical composition and biological characterization of extracts of male-produced pheromone from *Amblyomma cajennense* (Fabricius: 1787) (Acari: Ixodidae) by GC/MS-SIM and behavioural responses. International Journal of Acarology, DOI:10.1080/01647954.2012.678384, 2012.

GACHOKA, K. K.; LOULY, C. C. B.; FERREIRA, L. L.; BORGES, L. M. F. Induction of complete courtship ritual in *Amblyomma cajennense* using 2,6-dichlorophenol at female-equivalent quantities. Brazilian Journal of Veterinary Parasitology, v. 20, n.4, p. 347-350, 2011.

GACHOKA, K. K.; COSTA, D. P.; LOULY, C. C. B.; FERREIRA, L. L.; BORGES, L. M. F.; FARIA, L. C.; FERRI, P. H. Comparison of two methods to quantify 2,6-dichlorophenol from tick *Amblyomma cajennense* by GC/MS-SIM. Journal of the Brazilian Chemical Society, v. 21, n. 9, p. 1642-1647, 2010.

GACHOKA, K. K.; D. OBENG OFORI; E. Y. DANQUAH. Host suitability of two Ghanaian biotypes of *Bemisia tabaci* (Homoptera: Aleyrodidae) on five common tropical weeds. International Journal of Tropical Insect Science, v. 25, p. 236-244, 2005.

Publications (Book Chapter)

LÍGIA MIRANDA FERREIRA BORGES; CARLA CRISTINA BRAZ LOULY; SARA FERNANDES SOARES; LORENA ALESSANDRA DE SOUSA; **KENNEDY KIRIIRA GACHOKA. Pheromones in ticks** (Chapter 12). In BARROS-BATTESTI, D. M.; ARZUA, M.; BECHARA, G. H. **Ticks of medico-veterinary importance in the Neotropical Region: An illustrated guide for identification of species.** New Edition, São Paulo: Vox/ICTTD-3/Butantan, 223 p, 2012.

Selected conferences, seminars and workshops attended

MUST-UCD Collaboration Research and Research Output Seminar. 11th October, 2018.

Joint MSEESA and DAAD international Conference on Materials Science Research for Sustainable Energy in Africa, 26 – 27 September, 2018 Nairobi, Kenya.

GACHOKA, K. K.; WANDILI, S., MBOGO, E. Academic Field Visits: A Perspective from the Department of Biological Sciences of Meru University of Science and Technology. International Conference on University – Industry linkages, 4th – 6th October, Meru, 2017.

GACHOKA, K. K.; MBOGO, E. Population dynamics and genetic affiliation of *Bemisia tabaci* (Gennadius) (Homoptera: Aleyrodidae) from selected hosts in Meru County, Kenya. 16th Horticultural Association of Kenya Workshop on Sustainable Horticultural Production in the Tropics, Chuka, 2016.

GACHOKA, K. K. Population dynamics and genetic diversity of *Bemisia tabaci* (Gennadius) (Homoptera: Aleyrodidae) on weeds in Meru County, Kenya. 13th Horticultural Association of Kenya Workshop on Sustainable Horticultural Production in the Tropics, Meru, 2013.

BORGES, L. M. F.; LOULY, C. C. B.; **GACHOKA, K. K.** Chemical ecology of ticks. VI Brazilian Meeting of Chemical Ecology, Vicosa, MG, 2009.

GACHOKA, K. K.; COSTA, D. P.; LOULY, C. C. B.; FERREIRA, L. L.; FERRI, P. H.; BORGES, L. M. F. *Amblyomma cajennense* (Acari: Ixodidae): Characterization of the male pheromone and quantification of the sex pheromone. Annals of the VI Congress of Research, Teaching and Extension “Science and Regional Development”, Federal University of Goias, Goiania, GO, 2009.

GACHOKA, K. K.; COSTA, D. P.; LOULY, C. C. B.; FERREIRA, L. L.; BORGES, L. M. F.; FERRI, P. H. Quantification of the pheromone 2,6-dichlorophenol from female *Amblyomma cajennense* Fabricius (Acari: Ixodidae) by GC/MS and selective ion monitoring. XXI Brazilian Congress of Parasitology and II Parasitology Meeting of the South American trade block - Mercosul, Foz do Iguaçu, PR, 2009.

GACHOKA, K. K.; COSTA, D. P.; LOULY, C. C. B.; FERREIRA, L. L.; BORGES, L. M. F. Biological characterization of the attraction-aggregation-attachment pheromone produced by the Cayenne tick, *Amblyomma cajennense* Fabricius (Acari: Ixodidae). XXI Brazilian Congress of Parasitology and II Parasitology Meeting of the Mercosul, Foz do Iguaçu, PR, 2009.

GACHOKA, K.; COSTA, D. P.; FARIA, L. C.; BORGES, L. M. F.; FERRI, P. H. Identification and quantification by GC/MS-SIM of the sex attraction pheromone of the Cayenne tick. Brazilian Chemical Society, 32nd Annual Meeting, Fortaleza, CE, 2009.

SHORT COURSES ATTENDED

- Pesticides Awareness Course: 30th March 2005 at Dudutech Kenya Ltd.
- Pests Identification Course in Flowers and Vegetables: 23rd – 24th August 2005 at Homegrown Kenya Ltd
- Integrated Pest Management Course for Vegetable Growers: 3rd – 6th May 2005 at Kenya Forestry Research Institute, Muguga
- Integrated Pest Management Course in Commercial Flowers Production: 8th – 11th March 2005 at Homegrown Kenya Ltd
- Safe and Effective Use of Pesticides Subject Matter Specialist Training of Trainers Course: 25th – 27th October 2005 at Agrochemicals Association of Kenya.
- A Course in Composting of Farm Residues: 30th – 31st August 2005 at Dudutech Kenya Ltd
- First Aid Training Course: 10th February 2006 at Avenue Rescue Services
- Course in scientific editing of articles in the English language, 15th – 17th September 2008 at Federal University of Goias, Brazil

OTHER SKILLS ACQUIRED

Computer skills

Word Perfect, Ms Word, Ms PowerPoint, MS-DOS, Windows (all versions) Ms Excel, Ms Access, Windows NT, Internet, Intranet, Ms Exchange.

Data analysis

SPSS, NTSYS, GENSTAT

Accreditation

Accredited trainer, Agrochemicals Association of Kenya

PERSONAL INTERESTS

Interests: Research and philanthropy

Membership of professional associations: African Association of Insect Scientists (AAIS), Pan African Mosquito Control Association (PAMCA), ARPPIS Scholars Association (ASA), Kenya DAAD Scholars Association (KDSA).

Hobbies: Travelling, reading, music and making friends.

REFEREES

Prof. John K. Mworio
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