



Inspiring Innovation and Leadership

## KARATINA UNIVERSITY

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### STAFF PROFILE

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**Name:** Shadrack Kanyonji Kimani (PhD)

**Designation:** Lecturer

**Employment details:**

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**Research Links:**

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### Describe your professional self

*Dr. Shadrack Kimani is dedicated to training, research and community service, and currently serves as a Lecturer at Karatina University, in the School of Pure and Applied Sciences, Department of Biological and Physical Sciences. Dr. Kimani obtained his undergraduate and Master's degrees from Jomo Kenyatta University of Agriculture and Technology (JKUAT) and doctoral degree from Northeast Normal University (NENU) under the Chinese Government Scholarship. His research interests focus on drug resistance, parasite genomes, molecular biosciences and bioinformatics. His collaborations with scientists across these fields have resulted in several co-authorship as well as participation in national and international conferences, training sessions, and workshops. Besides, Dr Kimani is dedicated in advancing scientific knowledge to foster community development and prosperity.*

**Area/ Field of specialization:** Biochemistry, Molecular Biosciences and Bioinformatics

**Research interests:** Molecular mechanisms and surveillance of antimicrobial drug resistance, genetic regulation in plants, integration of bioinformatics tools in genomics, proteomics, and molecular biology.

**List some of your key published works.**

1. **Kimani S.**, Wang S., Xie J. et al., (2024) Integration of RNA-Seq and metabolite analysis reveals the key floral scent biosynthetic genes in herbaceous peony
2. Li Y., Bao T., Zhang J., Li H., Shan X., Yan H., **Kimani S.**, Zhang L., Gao X. (2024). The coordinated interaction or regulation between floral pigments and volatile organic compounds, Horticultural Plant Journal, <https://doi.org/10.1016/j.hpj.2024.01.002>.
3. Bao T, **Kimani S.**, Li Y, Li H, Yang S, Zhang J, Wang Q, Wang Z, Ning G, Wang L, Gao X. (2023) Allelic variation of terpene synthases drives terpene diversity in the wild species of the Freesia genus. Plant Physiol. 2023 Jul 3;192(3):2419-2435. doi: 10.1093/plphys/kiad172. PMID: 36932696; PMCID: PMC10315281.
4. Waithera M., Sifuna M., **Kimani S.**, Takei M (2023), Drug selection pressure and fitness cost for artemether-resistant *Plasmodium berghei* ANKA parasites. International Journal of Antimicrobial Agents. 62 (6): 107012, <https://doi.org/10.1016/j.ijantimicag.2023.107012>.
5. Yang S., Wang N., **Kimani S.**, et al., (2022). Characterization of terpene synthase variation in flowers of wild *Aquilegia* species from Northeastern Asia, Horticulture research Journal. <https://doi.org/10.1093/hr/uhab020>
6. **Kimani S.**, & Shume J. (2020). Antimalarial PRD resistance may be associated with elevated MDR-1 gene expression profiles but not point mutation in *P. berghei* ANKA isolates. African Journal of Biochemistry Research, 14(4), 102-111.
7. Bao T., **Kimani S.**, Yang S., et al., (2020) Functional characterization of terpene synthases accounting for the volatilized-terpene heterogeneity in *L. odoratus*, PCP14(4), 102-111
8. Li Y., Shan X., Gao R., Han T., Zhang J., Wang Y., **Kimani S.**, et al., (2020) MYB repressors and MBW activation complex collaborate to fine-tune flower coloration in *F. hybrida*. Communication Biology 3:396. doi.org/10.1038/s42003-020-01134-6
9. Yang, Z., Li, Y., Gao, F., Jin, W., Li, S., **Kimani S.**, et al., (2020). MYB21 interacts with MYC2 to control the expression of terpene synthase genes in flowers of *F. hybrida* and *A. thaliana*. experimental Botany.71 (14): 4140–4158, <https://doi.org/10.1093/jxb/eraa184>
10. Fang Q., Li Y., Liu B., Meng X., Yang Z., Yang S., Bao T., **Kimani S.**, et al., (2020). Cloning and functional characterization of a carotenoid cleavage dioxygenase 2 gene in safranal and crocin biosynthesis from *Freesia hybrida* doi.org/10.1016/j.plaphy.2020.06.035
11. Li Y., Shan X., Tong L., Wei C., Lu K., Li S., **Kimani S.**, et al., (2020). The Conserved and particular roles of R2R3-MYB Regulator FhPAP1 from *F. hybrida* in flower anthocyanin biosynthesis, Plant and Cell Physiology, doi.org/10.1093/pcp/pcaa065