AWARD
African Women in Agricultural Research and Development

# Profile

Fiona Mumoki
**2015 AWARD Fellow**

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| Position | PhD Student, University of Pretoria |
| Institution | University of Pretoria |
| Country | Kenya |
| PhD | Genetics, Jomo Kenyatta University of Agriculture and Technology (JKUAT), 2014 |
| Mentor | Dr. Daniel Masiga, Head, Molecular Biology and Bioinformatics Unit, ICIPE |
| Research Area | Determination of factors affecting pollinator health (pests and diseases) and ecology (foraging behavior, reproduction and sustainable growth) using tools in chemical and molecular ecology for sustainable use and conservation of pollinators in Africa. |

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Fiona Mumoki grew up in Nairobi as the middle child in a family of five children. Her initial plan was to be an entertainer, and she had even formed a band as a young girl. But then she stumbled upon one of her father's books, which changed her mind. "This book contained beautiful pictures of scientists receiving awards, and information about the nature of research," she recalls. "There was a quote by a researcher who spoke about stumbling in the dark to find a solution, and that's when I made up my mind to go into research."

Mumoki completed her bachelor's degree in Biology at the University of Nairobi, where she graduated with first-class honors in 2009, before moving on to a master's in Genetics at JKUAT. Now a PhD student at the University of Pretoria, she is studying Entomology with a focus on joint social insect research under the Zoology and Entomology Department.

For her master's she did honeybee research in Kenya, Tanzania, and Uganda. Her upcoming doctoral work will center on honeybee reproduction. "I've been focusing on the pests and pathogens affecting honeybees in East Africa," she notes. "The major pest is the Varroa destructor, an external parasitic mite that has caused colony collapse in other parts of the world." This line of research is critically important, given the fact that bees are responsible for pollination of three quarters of food crops worldwide.

Mumoki and expert beekeepers at ICIPE are engaging smallholder farmers to help them maximize their profits in a sustainable way. "We want to teach farmers how to increase their crop productivity by practicing extensive beekeeping as opposed to intensive beekeeping, as is done in much of the developed world," she explains. "Part of our research shows that honeybee colonies raised with a multi-floral diet are better able to grow, are more productive and, most importantly, are better able to resist honeybee diseases." Mumoki hopes that her research will eventually enable poor rural beekeepers to raise their

standards of living in a way that maintains the huge genetic pool of African honeybees.

Newly married, Mumoki recently won a post-graduate fellowship that will go toward supporting her PhD studies. Her husband is currently completing his PhD in Germany, and hopes to join her in Pretoria for his postdoctoral training. Once she has completed her doctorate, she hopes to pursue a post-doctoral fellowship focusing on honeybee and insect pollinator plant relationships. "Also, I want to be the first to disseminate the information to the smallholder farmers, since this is who the research is for," she states. "I have a clear vision of what I want to do."

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Mumoki hopes the AWARD Fellowship will put in place mechanisms that will enable her to generate confidence in dealing with smallholder farmers. "I hope to increase my networking capacity and learn to work with different types of people, specifically so I can prepare to work with diverse groups," she says. "I am very excited about the leadership and scientific writing workshops that AWARD offers—these are two skills I'm keen to learn." She also plans to take advantage of opportunities to collaborate with former AWARD Fellows, especially those who are working directly with smallholder farmers.

As an AWARD Fellow, Mumoki expects to enhance her research, writing, and leadership skills—and she fully intends to pass along what she learns to her colleagues. "The research proposal and grant writing courses will be essential to both me and my institution," she states.

Mumoki says the biggest challenge she has faced as a woman researcher is the need to continually prove herself. "Many men seem to feel that the place of a woman is in the home," she laments. "At the ICIPE lab where I worked previously, some of our male counterparts seem to think that we can't carry out research at the same level as they can. But I'm here not because there was a quota to fill—I'm here because I can do the job!"

Africa is just now waking up to the importance of honeybee conservation, according to Mumoki. "The fact that the work I'm doing isn't just to benefit myself but will one day benefit Africa gives me great satisfaction," she says. "At the end of day, I hope I can convince smallholders to look at honeybees as an essential part of the ecosystem."

**AWARD is a career-development program that equips top women agricultural scientists across sub-Saharan Africa to accelerate agricultural gains by strengthening their research and leadership skills through tailored fellowships. AWARD is a catalyst for innovations with high potential to contribute to the prosperity and well-being of African smallholder farmers, most of whom are women.**

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