

# Pascal Mahukpe Ayelo

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**Phone number:** (+1) 9797776109 (Mobile) | **Email address:** [pascal.ayelo@tamu.edu](mailto:pascal.ayelo@tamu.edu) | **LinkedIn:**

<https://www.linkedin.com/in/pascal-mahukpe-ayelo-phd-461814107/> |

**Address:** Department of Entomology, AgriLife Research, Texas A&M University, College Station, United States (Work)

## ● ABOUT ME

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- **Personality:** An independent team-oriented thinker, creative and curious, enthusiastic and resilient when tasked with challenges. Willing to learn new research and thrive in competitive environments.
- **Career Objective:** Interested in a position that involves integrated pest management (IPM), chemical ecology, and/or product development for agricultural or urban pest control in academics, industry or governmental institutions.
- **Professional summary:** Committed research entomologist with eight years of experience working in IPM and chemical ecology of agricultural insects in specialty crops including cotton, corn, tomato, mango and cashew. Enjoy lab and field research team-works including mentoring, extension and teaching.

## ● EDUCATION AND TRAINING

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15/09/2021 Pretoria, South Africa

**DOCTOR OF PHILOSOPHY IN ENTOMOLOGY** – University of Pretoria

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03/2016 Abomey-Calavi, Benin

**MASTER OF SCIENCES IN SUSTAINABLE PEST MANAGEMENT** – University of Abomey-Calavi

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07/2012 Abomey-Calavi, Benin

**BACHELOR OF SCIENCES IN AGRONOMY** – University of Abomey-Calavi

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## ● WORK EXPERIENCE

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01/01/2023 – CURRENT College Station, United States

**POSTDOCTORAL RESEARCH ASSOCIATE** – ENTOMOLOGY, TEXAS A&M UNIVERSITY

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- Leading lab and field research related to integrated pest management (IPM) involving biological control, use of plant growth-promoting rhizobacteria (PGPR), and chemical ecology-mediated interactions.
- Gaining experience in a new research area: use of wearable sensors for plant health monitoring.
- Contributing to writing of grant proposals and mentoring of students.

03/2022 – 10/2022 Abomey-Calavi, Benin

**RESEARCH ASSISTANT** – FACULTY OF AGRONOMIC SCIENCES, UNIVERSITY OF ABOMEY-CALAVI

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- Co-supervised a graduate student's thesis on *Clavigralla tomentosicollis*-cowpea chemical interactions.
- Assisted in teaching biological control, IPM and plant-insect interaction courses.

17/09/2017 – 15/09/2021 Nairobi, Kenya

**PHD SCHOLAR** – ICIPE IN KENYA JOINTLY WITH UNIVERSITY OF PRETORIA IN SOUTH AFRICA

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- Researched on: Identification of kairomones for the biological control of *Tuta absoluta* (Meyrick) and *Trialeurodes vaporariorum* (Westwood), two major pests of tomato *Solanum lycopersicum* L.
- Studied the behavioral responses using olfactometers (Y-tube and four arms) and wind tunnel and performed chemical volatile analysis using GC and GC-MS, and insect physiological responses using GC-EAD to identify specific kairomones used by the three natural enemies: the predator *Nesidiocoris tenuis* and the parasitoids *Dolichogenidea gelechiidivoris* and *Encarsia formosa*.

01/07/2016 – 17/08/2017 Cotonou, Benin

**RESEARCH CONSULTANT** – INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE (IITA)

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- Investigated interspecific competitions and oviposition preferences of tephritid fruit flies (*Bactrocera dorsalis*, *Ceratitis capitata* and *C. cosyra*) and their parasitoids (*Fopius arisanus* and *Fopius caudatus*).
- Mentored two graduate and three undergraduate students.

- Researched on the preference and performance of the parasitoid wasp *Fopius arisanus* (Hymenoptera: Braconidae) for fruit fly species (*Bactrocera dorsalis*, *Ceratitis cosyra* and *C. capitata*) and fruit fly-infested vegetable fruits (tomato, zucchini and sweet pepper) under laboratory and semi-field conditions.
- Mentored an undergraduate student.

## ● PUBLICATIONS

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### Publications (Most recent)

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- **Ayelo, P. M.**, Adesemoye, A.O., Xiong, C. & Fadamiro, H. (2024). Plant growth-promoting rhizobacteria differently influence crops growth and physiology depending on cultivar and rhizobacteria consortium's composition. *Biologia*, 1-19.
- Samira, A. M., Gwokyalya, R., Mama Sambo, S., Ndlela, S., Gesmalla, A., Obala, F., Aigbedion-Atalor, F., **Ayelo, P. M.** & Sunday Ekesi (2023). Recent advances in classical biological control of key horticulture pests: African perspective. *Atti Accademia Nazionale Italianadi Entomologia Anno LXX*, 2022: 65-70.
- Miano, R. N., **Ayelo, P. M.**, Musau, R., Hassanali, A., & Samira, A. M. (2022). Electroantennogram and machine learning reveal a volatile blend mediating avoidance behavior by *Tuta absoluta* females to a wild tomato plant. *Scientific Reports*. 12:8965.
- **Ayelo, P. M.**, Yusuf, A. A., Chailleux, A., Mohamed, S. A., Pirk, C. W. W. & Deletre, E. (2022). Chemical cues from honeydew and cuticular extracts of *Trialeurodes vaporariorum* serve as kairomones for the parasitoid *Encarsia formosa*. *Journal of Chemical Ecology*, 1-14.
- **Ayelo, P. M.**, Samira, A. M., Chailleux, A., Yusuf, A. A., Pirk, C. W. W. & Deletre, E. (2022). The parasitoid *Dolichogenidea gelechiidivoris* eavesdrops on semiochemicals from its host *Tuta absoluta* and tomato. *Journal of Pest Science*, 1-20.
- **Ayelo, P. M.**, Yusuf, A. A., Pirk, C. W. W., Chailleux, A., Samira, A. M., & Deletre, E. (2021). Terpenes from herbivore-induced tomato plant volatiles attract *Nesidiocoris tenuis* (Hemiptera: Miridae), a predator of major tomato pests. *Pest Management Science*, 77:5255-5267.
- **Ayelo, P. M.**, Pirk, C. W. W., Yusuf, A. A., Chailleux, A., Samira, A. M., & Deletre, E. (2021). Exploring the kairomone-based foraging behaviour of natural enemies to enhance biological control: A Review. *Frontiers in Ecology and Evolution*, 9:641974.
- **Ayelo, P. M.**, Yusuf, A. A., Pirk, C. W. W., Samira, A. M., Chailleux, A., & Deletre, E. (2021). The role of *Trialeurodes vaporariorum*-infested tomato plant volatiles in the attraction of *Encarsia formosa* (Hymenoptera: Aphelinidae). *Journal of Chemical Ecology*, 47(2): 192-203.
- Mbaluto, C., Ayelo, P. M., Duffy, A. G., Erdei, A. L., Tallon, A., Xia, S., Caballero-Vidal, G., Spitaler, U., Szelényi, M. O., Duarte, G., Walker III W. B. & Becher P. G. (2020). Insect chemical ecology: Chemically mediated interactions and novel applications in agriculture. *Arthropod-Plant Interactions*, 14:671-684.
- Remaining publications can be found at <https://scholar.google.com/citations?hl=en&user=uOAcT8AAAAAJ>

### Presentations (Most recent)

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- Plant growth-promoting rhizobacteria differently influence the germination, growth and physiology of crops depending on cultivar and rhizobacteria consortium. Oral presentation at ESA. Maryland, USA, Nov. 5-8<sup>th</sup>, 2023.
- Potential of exploiting plant volatiles for tomato protection against the leafminer *Tuta absoluta*. Oral presentation at Symposium on tomato research in West Africa held in Benin. Aug. 27-29<sup>th</sup>, 2022.
- Behavioural responses of the whitefly parasitoid *Encarsia formosa* (Hymenoptera: Aphelinidae) to host-infested tomato volatiles and host kairomone. Oral presentation at ESA (Virtual). Nov. 11-25<sup>th</sup>, 2020.

## ● HONOURS AND AWARDS

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### Scholarship award

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German Academic Exchange Service (DAAD) PhD In-Country/In-Region Scholarship award for the African Regional Postgraduate Programme in Insect Science (ARPPIS). Funding no. 91672680 (€ 17,407/year - Sept. 2017 to Feb. 2021).

### Travel grants

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- TAMU Department of Entomology travel fund to participate in the 2023 ESA annual meeting (\$ 700).
- University of Pretoria Bursary fund to support university registration fee and others in 2020 (\$ 1,275).
- International Centre for Agricultural Research and Development (CIRAD) funds granted to support travels to international trainings and conferences (€ 1,000 / year for three years, 2018 to 2020).