

Teddy Amuge (PhD)

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Professional Summary

To provide result-oriented solutions to agricultural production through research, mentorship (student and staff) and scientific knowledge transfer

Skills & Competence

- Biological sequence (RNAseq, DArTseq, Genome) data analysis
- Applied Bioinformatics
- Plant pathogen identification and crop management
- Plant-pathogen interaction
- Agronomic management of major tropical crops
- DNA sequencing and genotyping
- Molecular breeding (Marker development)

Preferred lecture courses

1. Applied Bioinformatics
2. Plant Molecular Biology (DNA, RNA, Protein analysis)
3. Next Generation Sequencing (NGS) technologies
4. Plant Genomics' tools and their application in crop improvement
5. Plant Biotechnology
6. Population and Evolutionary Biology
7. Plant Molecular Genetics
8. Functional Biology
9. Plant Microbiology
10. Plant Agronomy
11. Plant Physiology
12. Botany
13. Microbiology
14. Entomology

Work History

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

Nov 2017 – May 2018

Bioinformatics analyst of GWAS and Transcriptome data

- Assemble and filter raw sequence data
- Perform quality control and curating/trimming of filtered data
- For GWAS analysis, test for normality of filtered, curated data
- Where GWAS data is non-normal, transform (accordingly).
- Select trait-based SNPs for each trait analysed on GWAS platform
- Mentorship and guidance offered to MSc (Biotechnology) student working on peanut transcriptome

National Crops Resources Research Institute (NaCRRI)

Nov 2015 - Jul 2017

Consultant scientist

- Write invited and competitive grant proposals
- Participate in development of institutional-level proposals
- MSc and BSc student supervision (of experimental design; sorting, statistical analysis and reporting of sequence data)
- Participate in establishment of multi-locational on-farm variety trials (of cassava) trials

International Institute of Tropical Agriculture (IITA)

Nov 2015 - Jul 2017

Project-based PhD candidate

- Determine optimal glass-house conditions for growing cassava in pots
- Import and establish clean cassava planting materials (of all cassava varieties presumed to be tolerant or resistant to Cassava brown streak viruses (CBSVs)) at IITA, Nairobi.
- General management of glass-house and screen-house cassava germplasm
- Develop a technique for locally identifying the two species of CBSVs at IITA labs, Nairobi.

- Identify locally applicable method of virus transmission (whitefly versus grafting)

Education

University of Pretoria, Pretoria, South Africa

2012 to 2019

PhD: Plant Science

Thesis title "*Genome-wide transcriptome analysis of cassava challenged with Ugandan cassava brown streak virus (UCBSV)*"

Makerere University, Kampala, Uganda

2006 to 2011

MSc: Crops Science

Thesis title "*Development of a marker assisted selection system for breeding cassava resistant to cassava mosaic disease*"

Makerere University, Kampala, Uganda

2002 to 2006

BSc: Agriculture

Publications

Peer-reviewed journal articles

1. **Amuge T**, Berger DK, Katari MS, Myburg AA, Goldman SL, Ferguson ME. A time series transcriptome analysis of cassava (*Manihot esculenta* Crantz) varieties challenged with Ugandan cassava brown streak virus. *Sci Rep.* **2017**;7(1):9747.
2. Lozano R, del Carpio DP, Amuge T, Kayondo IS, Adebo AO, Ferguson M and Jannink J. 2017; Leveraging Transcriptomics Data for Genomic Prediction Models in Cassava bioRxiv.
DOI: <https://doi.org/10.1101/208181>.
3. Shi S, Zhang X, Mandel MA, Zhang P, Zhang Y, Ferguson M, **Amuge T**, Rounsley S, Liu Z and Xiong Z. Variations of five eIF4E genes across cassava accessions exhibiting tolerant and susceptible responses to cassava brown streak disease. *PLoS One.* **2017**;12(8):e0181998.
4. Kawuki RS, Pariyo A, **Amuge T**, Nuwamanya E, Ssemakula G, Tumwesigye S, Bua A, Baguma Y, Omongo C, Alicai T and Orone J. **2011**. A breeding scheme for local adoption of cassava (*Manihot esculenta* Crantz). *J Plant Breed Crop Sci Vol.* 3(6).

Oral presentations made at scientific conferences and workshops

1. Grant writing workshop and, Plant and Animal Genome (PAG) Conference. On in invitation by Bill and Melinda Gates Foundation (BMGF), January 4th – 9th, 2015 (grant workshop), 10th –14th (PAG), San Diego, California, USA
2. Cassava Brown Streak Disease Meeting and Africa Biosciences breakfasts, January 11th – 15th, 2014, San Diego, California, USA
3. Next Generation Cassava Breeding project convening preceding the Plant and Animal Genome Conference (PAG). Organized by BMGF, January 10th – 11th, 2013, San Diego, California, USA
4. Member of the local organizing committee; IFS/AWARD workshop on "Scientific writing in Agricultural Research", March 7th–18th, 2010, Entebbe, Uganda
5. International Conference on Agro-biotechnology, biosafety and seed systems in developing countries, March 8th–11th, 2010, Kampala, Uganda
6. Member of local organizing committee for "International cassava brown streak disease workshop", May 5th – 7th, 2010, Entebbe, Uganda
7. Training, coordination and logistics management. SCARDA (ASARECA) training of technicians, November 1st – 14th, 2009, Kampala, Uganda
8. Biosafety workshop on confined field trials, April 12th – 13th, 2007, Kampala, Uganda

Poster presentations at scientific conferences and workshops

1. **Amuge T**, et al., Candidate genes conferring tolerance to cassava brown streak disease in cassava (*Manihot esculenta* Crantz). Poster presented at the Plant and Animal Genome (PAG) conference. January 11th – 15th, 2014, San Diego, California, USA
2. **Amuge T**. Genotyping Ugandan cassava breeding populations using SSR markers for resistance to cassava mosaic disease. Global Cassava Partnership, July 21st – 25th 2008, Ghent, Belgium
3. **Amuge T**, et al., Genotyping Ugandan cassava breeding populations using markers associated with resistance to cassava mosaic disease. 8th African Crop Science Society Conference, October 27th – 31st 2007, El-Minia, Egypt

Management and leadership training

1. Panel selection of winning proposals-performed with Bill and Melinda Gates Foundation, half-day participation, January 9th, 2014, San Diego, California, USA
2. AWARD Women's Leadership and Management Course: September 21st - 27th, 2011, Arusha, Tanzania

Recognition/Awards

1. **Young career woman scientist. 2016.** Prize awarded by Cornell University at World Congress on Root and Tuber Crops January 18th - 22nd, Nanning, China.
2. **Finalist** among 15 PEARL (Program for Emerging Agricultural Research Leaders) participants invited to submit full proposals (out of 470 respondents) for 2014 PEARL round. The proposed project was entitled "**Tapping into the potential of smallRNAs in observed field tolerance and recovery of cassava infected with cassava brown streak disease (CBSD)**", January 4th – 9th, 2015, San Diego, California, USA. The proposal was not funded.
3. **Growing talents: Youth in Agriculture #12:** Teddy Amuge. CGIAR, *40 years on, the CGIAR looks at agriculture through the eyes of the under 40s*
<http://ictkm.cgiar.org/2011/05/05/growing-talents-youth-in-agriculture-12-teddy-amuge/>
4. **Fast track on the Careers of African Women Agricultural Scientists. Represented AWARD** (African Women in Agricultural Research and Development program) at International Fund for Agricultural Development (IFAD) event during the 55th Commission on the Status of Women. February 22nd, 2011, New York, USA
5. **One of 80 winners of 2010 AWARD.** Funded by Bill and Melinda Gates Foundation (BMGF). *A two year program which includes tracked mentorship with successful scientist, scientific training in a recognized, international laboratory, leadership training.*
6. **Best paper, cassava research.** Prize awarded at the 9th African Crop Science Society Conference, September 28th – October 1st, 2009, Cape Town, South Africa.

Professional association

1. Global Plant Council
2. International Society of Plant Molecular Microbe Interactions (IS-MPMI)

Referees

Prof. Dave Berger (Principle PhD supervisor)

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