

Abulfatai TIJJANI

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https://scholar.google.com/citations?user=H_b5Rt0AAAAJ&hl=en&oi=ao

<https://www.researchgate.net/profile/Abulfatai-Tijjani>

Computational Biology Research Skills

- Over five years of experience in the analysis of high-throughput genomics data sets including whole-genome sequences for variants detection (SNPs, InDels and CNV) for population genomics studies including the signature of selection study
- Over five years of experience working with command line-based computational tools for genetic analysis and next-generation sequencing protocols (e.g. BWA, Bowtie, GATK, SamTools, VCFtools, shell scripting and design of analysis pipelines)
- Experience in transcriptomic data analysis pipelines and protocol for the Functional Annotation of Animal Genomes
- Knowledgeable in the application of various statistical methods and web-based tools for genome analysis and functional annotation
- Experience of working within high-performance computers and server administration duties including support for multiple users
- Experience in computer programming skills such as bash, Python, and R, with the ability to write or follow reproducible coding and pipelines for genomics data analysis
- Experience in the use of various computational biology tools and packages within Linux and Windows environments.

Transferrable skills

- Strong communication skills, both verbal and written developed while preparing various scientific reports, manuscripts and presentations at various local and international meetings
- Ability to work and interact effectively in a team of diverse scientists and with multidisciplinary research collaborators
- Ability to work both collaboratively and independently
- Ability to plan and manage a research project
- Developing writing skills in research proposals and grant application
- Ability to prioritise workload and to meet deadlines
- Comfortable working in a highly collaborative research environment
- Self-motivated and ability to use own initiatives

Education and Research experience

Jan 2022 – to date

Post-doctoral Associate

Munger lab @ The Jackson laboratory, Bar Harbor ME

Responsibilities:

- Computational analysis of multi-omics data derived from Diversity Outbred (DO) mice to investigate host variations in cancer growth and cachexia phenotype in cancer patients.

Jan 2019 – Dec 2021

Post-doctoral Fellow

Centre for Tropical Livestock Genetics and Health (CTLGH),

International Livestock Research Institute (ILRI), Ethiopia node (working remotely from the UK)

Responsibilities:

- Coordinate the selection and preparation of cattle samples across Sub Saharan Africa for whole-genome resequencing under the CTLGH/ILRI Genomic Reference Resources for African cattle project
- Lead the computational analyses and interpretation of results of over 600 genome sequences and genotype data of over 3,500 cattle samples for population genomics studies and identification of candidate genes related to productivity and adaptation to tropical climates
- Preparation of manuscripts and research results for publication and dissemination to collaborators through newsletters
- Coordinate and contribute to bioinformatics capacity building activities including supervision of Graduate fellow, training workshops, as well as administration of high computing bioinformatics server
- Contribute to the development of research concept notes and proposals for applications to CTLGH Funders
- Contribute to the development of a project database and website
- Prepare project reports and presentations at both internal and international scientific meetings
- Contribute to CTLGH strategy for the development of tropical dairy genetics program in Africa
- Peer-reviewer for Scientific Reports journal as well as Parasite Epidemiology and Control journal

Oct 2014 – Sep 2018

Doctoral candidate (PhD in Genetics)

School of Life Sciences, University of Nottingham, UK.

Thesis: Genome diversity and adaptation of indigenous African taurine and zebu cattle populations

Award: Vice-Chancellor Scholarship for Research Excellence (International), University of Nottingham, UK

Sep 2012 – Sep 2013

MSc Applied Biomolecular Technology

School of Biosciences, University of Nottingham, UK

Thesis: Genetic diversity and population structure of West and East African cattle, a genome-wide comparison.

Award: University of Nottingham Developing Solutions Masters Scholarship in 2012

Nov 1998 – Dec 2006

Doctor of Veterinary Medicine (DVM)

Faculty of Veterinary medicine, Ahmadu Bello University, Zaria

Prize: Best Clinical Conference presentation prize, Faculty of Veterinary Medicine, Ahmadu Bello University Zaria 2005

Publications

- Talenti, A., Powell, J., Hemmink, J. D., Cook, E. A., Wragg, D., Jayaraman, S., Paxton, E., Ezeosor, C., Obishakin, E. T., Agusi, E. R., **Tijjani, A.**, ... & Prendergast, J. G. (2022). A cattle graph genome incorporating global breed diversity. *Nature communications*, 13(1), 1-14.
- **Tijjani, A.**, Salim, B., da Silva, M. V. B., Eltahir, H. A., Musa, T. H., Marshall, K., ... & Musa, H. H. (2021). Genomic signatures of desert adaptation at gene-rich regions in zebu cattle from the African drylands. *bioRxiv*.
- Jang, J., Terefe, E., Kim, K., Lee, Y. H., Belay, G., **Tijjani, A.**, ... & Kim, H. (2021). Population differentiated copy number variation of *Bos taurus*, *Bos indicus* and their African hybrids. *BMC genomics*, 22(1), 1-11.
- Mauki, D. H., Adeola, A. C., **Tijjani, A.**, Akanbi, I. M., Sanke, O. J., Abdussamad, A. M., ... & Zhang, Y. P. (2021). Genetic variation of Nigerian cattle inferred from maternal and paternal genetic markers. *PeerJ*, 9, e10607.
- Kim, K., Kwon, T., Dessie, T., Yoo, D., Mwai, O. A., Jang, J., Sung, S., Lee, S., Salim, B., Jung, J., Jeong, H., Tarekegn, G M., **Tijjani, A.**, ... & Jeong, H. (2020). The mosaic genome of indigenous African cattle as a unique genetic resource for African pastoralism. *Nature Genetics*, 1-12.
- **Tijjani, A.**, Utsunomiya, Y. T., Ezekwe, A., Nash, O., & Hanotte, O. H. (2019). Genome Sequence Analysis Reveals Selection Signatures in Endangered Trypano-tolerant West African Muturu Cattle. *Frontiers in genetics*, 10, 442.
- **Tijjani, A.** (2019). Genome diversity and adaptation of African Taurine and Zebu cattle (Doctoral dissertation, University of Nottingham).
- Aguiar, T. S., Torrecilha, R. B. P., Milanese, M., Utsunomiya, A. T. H., Trigo, B. B., **Tijjani, A.**, ... & Neves, H. H. D. R. (2018). Association of copy number variation at intron 3 of HMGA2 with navel length in *Bos indicus*. *Frontiers in genetics*, 9, 627.
- Bahbahani, H., **Tijjani, A.**, Mukasa, C., Wragg, D., Almathen, F., Nash, O., ... & Hanotte, O. (2017). Signatures of Selection for Environmental Adaptation and Zebu × Taurine Hybrid Fitness in East African Shorthorn Zebu. *Frontiers in Genetics*, 8, 68.

Selected conferences/presentations

- Plant and Animal Genome conference XXVII, San Diego, CA. 7-11, January 2020 – **Poster presentation** on "Genomic Reference Resource for African Cattle (GRRFAC) project"
- 37th International Society for Animal Genetics (ISAG) Conference, Lleida, Spain. 7-12, July 2019 – **Poster and oral presentations** on "Towards a complete genome characterisation of all indigenous African cattle."
- Plant and Animal Genome conference XXVII, San Diego, CA. 12-16, January 2019 – **Poster and oral presentation** on "Whole-genome sequence analysis of West African taurine reveal their unique Trypanotolerant adaptation."
- Symposium on African Livestock Trypanosomes 2018 (#SALTed2018) The Roslin Institute, Easter Bush Campus Midlothian, United Kingdom. (Attended)
- 36th International Society for Animal Genetics (ISAG) Conference, UCD, Dublin. 16-22, July 2017 – **Poster and oral presentations** on "Towards the unravelling of the genomic basis of milk production traits in African dairy zebu cattle."
- School of Life Sciences Postgraduate Research Symposium, University of Nottingham, UK. 13-14 July 2017. – **Oral presentation** on "Genome diversity and adaptation of African Trypanotolerant taurine and zebu dairy cattle."
- ISCB NGS-Barcelona - Structural Variation and Population Genomics Conference, Barcelona, Spain. 3-4 April 2017 – **Poster presentation** on "Whole-genome copy number variation (CNV) detection in West Africa Trypanotolerant taurine cattle population."
- Manchester Molecular & Genome Evolution Symposium June 2016 (MaGE2016), University of Manchester (Attended)
- 35th International Society for Animal Genetics (ISAG) Conference, Salt Lake City, Utah, USA. 23-27, July 2016 – **Poster and oral presentations** on "Comparative genomics reveal common diversity and signature of selection in West African taurine cattle population."
- 49th UK Population Genetics Meeting, Edinburgh, UK. 15-18, December 2015 – **poster presentation** on "Comparative genomics reveal common diversity and signature of selection in West African taurine cattle population."
- 48th UK Population Genetics Meeting, Sheffield, UK. 6-9 January 2015 (Attended)
- 34th International Society for Animal Genetics (ISAG) Conference, Xi'an China. 27 Jul – 1 Aug 2014 – **Poster and oral presentation** on "Genetic diversity of East and West African cattle: A genome-wide comparison"

Fellowship and awards

- International Research Collaboration Award Grant, (GBP 3000), UoN, UK 2017
- 2016 Yoshi Suzuki ISAG Award (EURO 2000) 2016
- 2016 ISAG Travel bursary (USD 1800) 2016
- School of Life Sciences Travel Bursary (GBP 500) 2015
- Vice-Chancellor Scholarship for Research Excellence (International) 2014
- 2014 ISAG Travel bursary (USD 1800) 2014
- Developing Solutions scholarship (GBP 8,600) 2012

Work Experience

Consultant Bioinformatics analyst (contract)

Dec 2018

International Centre for Agricultural Research in the dry areas (ICARDA)

Teaching assistant/Demonstrator (part-time)

2014 – 2018

University of Nottingham, UK

- Participated in and provided help and guidance to undergraduate students during different practical classes including modules such as Manipulating Genes and Genomes, Parasite and control of parasitic diseases, Human Physiology and immunity. As well as involved in marking of practical student coursework
- Act in the capacities of a lead and assistant exam invigilator for over three years
- Act as a demonstrator on presentation skills training course within the Graduate school
- Act as Postgraduate Mentor to final year undergraduate students in the School of Pharmacy undertaking Pharmacy leadership and Management Module. My role involved having regular meetings with diverse student cohort, providing pastoral advice and coaching them to reflect and improve their capability during the module.

Visiting Research Scientist

Aug 2017 – Sep 2017

Recombinetics Inc, Saint Paul, Minnesota, USA

Graduate Centre Coordinator (part-time)

2016 - 2017

University of Nottingham, Graduate School.

- As the Coordinator of one of the five Graduate Centers at the University of Nottingham, UK, I was responsible for the smooth running of day-to-day activities at the Medicine and Health Sciences Graduate Centre (MHSGC) by providing administrative support to the Researcher Training and Development Managers (RTDMs) and postgraduate students in MHS Faculty.
- Liaised with University academic staff who are tutors on the various short courses and training programs taking place in the MHS Graduate Centre
- Prepared course material and ensure the booking of a seminar room for a scheduled course
- I organised regular events to bring together postgraduates in Medicine and Health Sciences faculty in a relaxed environment to enable networking.
- Actively participated in the organisation of the annual MHS postgraduate conference for the first-year PhD students in the faculty of Medicine and Health Sciences
- Administered weekly "Shut and write" short course for graduate research students in the University

Scientific Officer

2010 – 2021

Centre for Genomics Research and Innovation, CGI/ NABDA, Abuja

- Initiated and worked as a co-investigator on the Nigerian livestock genomics project. This project involved the use of Next Generation Sequences for the genetic characterisation of indigenous livestock breeds in Nigeria
- Worked collaboratively with both local and international researchers on the study of indigenous Nigeria cattle (Zebu and taurine) using genomics approaches to understand their local adaptation and productivity traits
- Developed research proposals and funding applications
- Coordinated the organisation of seminars and training workshops

- Coordinated research activities and supervision of colleagues in the department

Courses attended

- Introduction to AWS for Genomics Researchers. Genome Institute of Singapore, March 22-23, 2022
- Software Carpentry shell | git | Python training at JAX. February 15 - 18, 2022
- Bioinformatic training workshop on RNA-seq, ChIP-seq and ATAC-seq data analysis. Pre-conference training organised by Iowa State University during PAG 2020 meeting in San Diego
- BBASH DNA-Seq Next Generation Sequencing Analysis Workshop, University of Leicester, UK. February 1-3, 2016
- Exploratory Methods for Population Genetics Using R Barcelona, Spain. October 5-9, 2015
- Livestock Conservation Genomics: Data, Tools and Trends. Unesp-Jaboticabal, Sao Paulo, Brazil. August 17-22, 2015.
- Post-genomics and bioinformatics training course, University of Nottingham, Sutton Bonington campus. December 16-18, 2014

Social responsibilities

- ISAG conference workshop chair, livestock Genomics for developing countries **2019 – to date**
- Volunteers recruitment officer for UNNSS "Liter of Light Nigeria" project **2017**
- Graduate Centre Coordinator, University of Nottingham, UK **2016 - 2017**
- Treasurer, University of Nottingham Nigerian Student Society **2016 - 2017**
- Financial Secretary, University of Nottingham Nigerian Student Society **2015 – 2016**

Professional memberships

- Genetic Society of America (GSA) – member since January 2022
- JAX Cancer Center - Associate trainee member since February 2022
- International Society for Animal Genetics (ISAG) – member since July 2014

References

Will be provided upon request