CURRICULUM VITAE

I. (a) Name — Funmilayo Ibitayo Deborah Afolayan (nee Ifede)
(b) Date of Birth — 25 May, 1977
(c) Department — Zoology
(d) Faculty — Science

II. (a) First Academic Appointment: — Assistant Lecturer (04 September, 2012).
(b) Present post (with date): — Senior Lecturer (1 October, 2021).
(c) Date of last Promotion: — 1 October, 2021
(d) Date last considered (in cases where promotion was not through): — Not Applicable

III. University Education (with dates)

(a) University of Ibadan, Ibadan, Nigeria:	1999 - 2004
(b) University of Ibadan, Ibadan, Nigeria:	2006 - 2008
(c) University of Ibadan, Ibadan, Nigeria:	2010 - 2015

IV. Academic Qualifications (with dates and granting bodies):

(a) B.Sc. (Zoology), University of Ibadan	2004
(b) M.Sc. (Zoology), (Cellular Parasitology) University of Ibadan	2008
(c) Ph.D. (Zoology), (Cellular Parasitology) University of Ibadan	2015

V. Professional Qualifications and Diplomas (with dates):

(a) Postgraduate Diploma in Education (PGDE) , National Open University of Nigeria	2012
(b) Certificate in Herbal Medicine, Mirato School of Naturopathy, Osun State, Nigeria	2014
(c) Certificate in Wellcome Genome Campus Advanced Course in Practical Aspects of Small Molecule Drug Discovery: At the Interface of biology, Chemistry and Pharmacology, Wellcome Genome Campus, Hinxton, Cambridge.	2016
(d) Certificate in Tropical Parasitology: Protozoans, Worms, Vectors and Human Diseases, Duke University and Kilimanjaro Christian Medical University College, offered through Coursera.	2017
(e) Certificate in Wellcome Genome Campus Advanced Course: Malaria Experimental Genetics, West African Centre for Cell Biology and Infectious Pathogens (WACCBIP), College of Basics and Applied Sciences, University of Ghana, Accra, Ghana.	2017
(f) Certificate of Training in Advances in Infection, Immunity, Non-Communicable Disease and Comorbidities, University of Glasgow, Wellcome Centre For Molecular Parasitology in Blantyre Malawi.	2017
(g) Certificate in Introduction to Bioinformatics (IBT), Pan Africa Bioinformatics Network for Human Heredity and Health in Africa (H3Africa).	2018
(h) Certificate in Structural Bioinformatics and System Biology,	

Science Resources Africa and MRC Unit, The Gambia. 2019

(i) Certificate in Absorption, distribution, metabolism, excretion, and toxicity (ADMET), Homology modeling and Molecular Docking, Jaris Computational Biology Centre (Online Training). 2020

(j) Certificate in *de novo* synthesis of test compounds, Lead Optimization, Molecular Docking and Docking Validation, ADMET Predictions and Primer Design, Jaris Computational Biology Centre (Online Training). 2020

VI. Scholarship, Fellowship and Prizes (with dates) in respect of undergraduate and postgraduate work done:

(a) Prof. Mark Nwagwu prize in Cell Biology and Genetics to the Best M.Sc Zoology Student (Cellular Parasitology), University of Ibadan 2008

VII. Honours, Distinctions and Membership of Learned Societies

(a) Global Health Travel Award to attend, participate and present a research paper in the Keystone Symposia on New Approaches to Vaccines for Human and Veterinary Tropical Diseases. Southern Sun Cape Sun, Cape Town, South Africa. 2016

(b) Travel Grant/Sponsorship by Wellcome Trust and University of Ibadan to attend Wellcome Genome Campus Advanced Course on Practical Aspects of Small Molecule Drug Discovery, Wellcome Genome Campus Conference Centre, Wellcome Genome Campus, Hinxton, Cambridge, United Kingdom. 2017

(c) Travel Grant/Sponsorship by Wellcome Trust to participate in Wellcome Genome Campus Advanced Course: Malaria Experimental Genetics, West African Centre for Cell Biology and Infectious Pathogens (WACCBIP), College of Basics and Applied Sciences, University of Ghana, Accra, Ghana. 2017

(d) Travel Award by Wellcome Centre for Molecular Parasitology to participate in Expert symposium and a training course which focused on Advances in Infection, Immunity, Non-Communicable Disease and Comorbidities organized by University of Glasgow (Wellcome Centre For Molecular Parasitology), Ryalls Hotel, Blantyre Malawi. 2018

(e) Travel Grant/Sponsorship by International Veterinary Vaccinology Network (IVVN) to attend International Veterinary Vaccinology Network IVVN meeting at Ole Sereni Hotel, Nairobi. 2018

(f) The International Veterinary Vaccinology Network (IVVN) Grant to African Vaccinology Network (AfVANET), to organize scientific workshop in Kenya for young African scholars 2019

(g) IVVN African Schools Outreach Program Grant to host schools outreach workshops in Nigerian Secondary Schools with overall goal of inspiring the next generation female scientists. 2019

(h) Global Health Travel Award to attend, participate and present a research paper in the Keystone Symposia on The Malaria Endgame: Innovation in Therapeutics, Vector Control and Public Health Tools. Addis Ababa, Ethiopia. 2019

(i) 5 Weeks HackBio Bioinformatics Internship Program Certificate 2020

(j) IVVN African Schools Outreach Program Grant – to host schools outreach workshops in Nigerian Secondary Schools with overall goal of inspiring the next generation female scientists. 2021

(k) Travel Grant/Sponsorship by International Veterinary Vaccinology Network (IVVN) to attend the International Veterinary Vaccinology Network Early Career Researchers' Workshop at University of Edinburgh, Easter Bush, Scotland, U.K 2023

(l) Shortlisted for the Nature research/Estee Lauder Scientific Award for Inspiring women in Science – Science Outreach Category 2023

(m) National Treasurer, Zoological Society of Nigeria (ZSN)

(n) Member, International Society of Infectious Disease

(o) Member, Science Association of Nigeria (SAN)

(p) Member, International Veterinary Vaccinology Network (IVVN)

(q) Member, African Vaccinology Network (AfVANET)

(r) Member, Nigeria Society for Immunology (NSI)

(s) Member, Nigerian Bioinformatics and Genomics Network (NBGN)

VIII Details of Teaching/Working Experience

(a) Working Experience

i. Science Teacher: - Mothers' Pride International Nursery and Primary School, Ilisan Remo, Ogun State. 1995 - 1997

ii. Chemistry/Biology Teacher - Ilisan High School, Ilisan Remo, Ogun State 1998 – 1999

iii. Tutorial Assistant - Department of Biological Sciences, University of Maiduguri, Maiduguri, Borno State (NYSC), Nigeria 2004 – 2005

(b) Teaching Experience

I participated in teaching of the following courses in University of Ibadan since 2012 to date:

Undergraduate Courses:	Workload	Period
1. BIO 214: Biological Techniques	33.33%	2013 to date
2. BIO 311: Genetic Variability and Evolution	16.67%	2012 – 2023
3. ZOO 312: Biology of Tropical Parasites	16.67%	2015 - 2017
4. BIO 414: Impact of Biology on the Society	33.33%	2012 - 2017
5. BIO 411: Genetics in Molecular Biology	16.67%	2018 to date
6. ZOO 117: Introductory Vertebrate Zoology	33.33%	2017 to 2021
7. ZOO 114: Principles of Cell Biology and Genetics	25%	2022 to date
8. ZOO 118: Practical Zoology	5%	2017 to date
9. ZOO 212: Chordate Zoology	20%	2018 to 2021
10. ZOO 214: Invertebrate Zoology II	25%	2018 to date
11. ZOO 215: Introduction to Macromolecules in Animals	33.33%	2018 to date
12. ZOO 316: Histology	20%	2018 to date
13. BIO 308: Parasitology I	33.33%	2019 to date
14. BIO 401: Parasitology II	33.33%	2021

15. ZOO 418: Essay	5%	2012 to date
16. ZOO 419: Project	5%	2012 to date

I participated in the teaching of the following postgraduate courses since 2016 to date:

Postgraduate Courses:	Workload	Period
1. ZOO 733: Molecular Basis of Host-Parasite Interactions	33.33%	2016 to date
2. ZOO 750: Research Project	6.25%	2016 to date
3. ZOO 751: Current Topics in Zoology	6.25%	2016 to date
4. ZOO 774: Physiology and Biochemistry of Parasites	16.67%	2017 to date
5. ZOO 777: Parasite Immunology	16.67%	2017 to date
6. ZOO 790: Cellular Organization and Compartmentalization	25%	2016 to date
7. ZOO 792: Macromolecular Structure and Function	25%	2016 to date
8. ZOO 793: Molecular Genetics	25%	2016 to date
9. ZOO 798: Molecular Techniques in Parasitology	25%	2016 to 2022
10. ZOO 796: Population and Quantitative Genetics	25%	2017 to date
11. ZOO 791: Human Genetics	25%	2017 to date
12. ZOO 730: Techniques in Animal Genetics	25%	2017 to date
13. ZOO 731: Environmental Carcinogenesis	25%	2017 to date
14. ZOO 794: Environmental Mutagens	25%	2018 to date
15. ZOO 795: Advanced Cytogenetics	25%	2016 to date
16. ZOO 701: Pollution and Climate Change	25%	2016 to date
17. PDZ 705: Essentials of Cell Biology and Genetics	25%	2016 to 2022
18. PDZ 708: Forensic Biology	25%	2016 to 2022

(c) Research Supervision

Completed

B.Sc.	14
M.Sc.	22

On-going

B.Sc.	2
M.Sc.	3
MPhil/PhD	1

(d) Administrative duties

1. Secretary, Departmental Meetings	2012 - 2018; 2019 - 2021
2. 100L Registration Officer	2013 - 2018
3. Financial Secretary, Departmental Welfare Committee	2014 - 2018
4. Assistant M.Sc. Coordinator	2018 – 2019
5. Member, University of Ibadan Senate	2020 to 2022
6. Member, Department of Zoology Postgraduate Committee	2016 to date

7. Treasurer, Faculty of Science Alumni Committee 2018 to date
8. 400 Level Coordinator 2021 to date
9. Departmental Timetable Coordinator 2021 to date
10. Departmental Examination Officer 2021 to date

(e) Community Service

1. Invigilator: Post-UTME examination at the University of Ibadan 2019 – 2021
2. Reviewer: Research Journals 2018 - 2021
3. Local Organizing Committee Treasurer: Faculty of Science, University of Ibadan Graduating Students' Summit 2019 – 2021
4. Member: Academic Staff Union of Universities (ASUU) Electoral Committee 2022 - 2023
5. Facilitator: Hands-on practical workshops sponsored by International Veterinary Vaccinology Network (IVVN) Africa Schools Outreach Programme (ASOP) for Secondary Schools Students in Oyo and Ogun States. 2019 - date

IX. Research

(a) Completed

(i) Relationship between malaria and cholesterol levels among children living in Igbo-Ora, South-western, Nigeria.
(ii) *In vitro* and *in vivo* antiparasitic activities of some medicinal plants on *Leishmania major*, *Plasmodium falciparum* and *Plasmodium berghei*.
(iii) Comparative activities of nanoparticulate and free curcumin on *Plasmodium berghei* infected mice and immune responses in mice.
(iv) Ethnobotanical surveys of medicinal plants used as malaria, immunomodulatory and cancer therapies in northern and south-western Nigeria
(v) Immunodulatory effect of *Phoenix dactylifera* supplemented diet on *Aeromonas hydrophila* infected *Clarias gariepinus*
(vi) *In silico* docking of phytocompounds derived from antiparasitic medicinal plants against selected molecular targets of some protozoan parasites.
(vii) *In silico* docking study predicting the binding of phytocompounds from *Tithonia diversifolia* and *Andrographis paniculata* with target proteins of *Plasmodium falciparum.*
(viii) *In silico* and *In vivo* Evaluations of Multistage Antiplasmodial Potency and Toxicity Profiling of n-Hexadecanoic acid derived from *Vernonia amygdalina*
(ix) Network pharmacology-based analysis of immunomodulatory mechanisms in *Nigella sativa*, *Moringa oleifera*, and *Morinda citrifolia*.
(x) Design of Multi-epitope Vaccine Construct against Ascariasis and Trichuriasis through reverse vaccinology approach
(xi) Immunoinformatics-Driven Design of Malaria Protein-Based Multi-Epitope Vaccine

(b) In progress

Exploration of FDA-Approved Drugs for Antiplasmodial and Immunomodulatory Activity Using Drug Repurposing Approach:
This research leverages repositioning already existing drugs from DrugBank as new antimalarial drugs and started in 2023. The need for this study arises from the growing resistance of *Plasmodium spp.* to existing antimalarial drugs, which are largely due to genetic mutations, and to reduce the high cost of drug development. This research targets validated proteins essential for the parasite's survival, growth, and transmission. Additionally, I am investigating the safety profiles of these potential drug candidates, focusing on their pharmacodynamics and pharmacokinetics, which are crucial for developing affordable and effective malaria therapies. The aim is to discover FDA-approved drugs that are capable of inhibiting critical protein targets at various stages of the *Plasmodium falciparum* lifecycle, while also assessing their safety and pharmacokinetic profiles through ADMET (Absorption, Distribution, Metabolism, Excretion, and Toxicity) profiling of the identified drug leads. So far, we have completed the Computer-Aided Drug Discovery (*in silico*) screening of 1900 FDA-approved drugs from the DrugBank and drugs such as acalabrutinib, avapritinib and belumosudil have been predicted to perform better than the reference drugs. We are presently working on the immunomodulatory properties of the identified leads and these will be subjected to confirmation through *in vitro and in vivo* studies. It is hoped that this project will end by 2025. Three MSc students are currently on this project.

***In vivo* Antimalarial and Immunomodulatory Phytochemicals derived from *Anogeissus leiocarpus*:**

Building on my previous ethnobotanical surveys and *in silico* studies, this current project, which commenced in 2024, seeks to validate the predicted antiplasmodial and immunomodulatory potential of phytochemicals derived from *Anogeissus leiocarpus*, specifically oleic acid, tetradecanoic acid, and N-Glycylglycine. The study seeks to not only confirm the anti-malarial properties of these compounds but also uncover their potential to modulate immune responses, offering a dual therapeutic benefit. By exploring both the anti-parasitic and immunomodulatory effects, this project aims to identify novel treatments that can simultaneously combat malaria and enhance the body's natural defences. Two undergraduate students are currently working on this project.

1. **Ifede F. I**. (2008). The relationship between malaria and the level of high-density lipoprotein-cholesterol (HDL-C) in some children living in Igbo-Ora, Southwestern, Nigeria. M.Sc. Project, Department of Zoology, University of Ibadan. 54pp.

2. **Afolayan F. I. D. (**2015)**.** Antiplasmodial and immunomodulatory activities of selected medicinal plants from Omu-Aran, Kwara State. Ph.D Thesis, Department of Zoology, University of Ibadan. 240 pp.

Grants

i. The International Veterinary Vaccinology Network (IVVN) to African Vaccinology Network (AfVANET), 2019 – to organize a scientific workshop in Kenya for young African scholars. Role: Co-Applicant

ii. The 2020 TETFUND National Research Fund 2020: Identifying Common Protein Biomarkers for Diagnosing Schistosomiasis. Role: Co-Investigator **(NRF/SETI/HSW/00154)**

iii. The 2023 TETFUND National Research Fund (NRF): Development of Drug-based, Multipotent Antivenom against Nigerian Snakes Role: Co-Investigator **(TETF/ES/DR&D/CE/NRF/2023/CC/STI/00075)**

iv. IVVN African Schools Outreach Program Grant – to host schools outreach workshops in Nigerian Secondary Schools with overall goal of inspiring the next generation female scientists, 2021 – 2024 **Principal Facilitator**

X. Publications

(a) Books already published: Nil
(b) Chapters in books already published: Nil
(c) Articles have already appeared in refereed conference proceedings:

1. **Afolayan F**., Anumudu C. I., Adegbolagun O. M., Orwa J. A., Irungu B. N., Kangethe L. N., Mathaura C. N., Nwikwabe M. N., Nyangacha R. M. and Omar S.A. (2014). *In vitro* antiplasmodial activity and cytotoxicity of some medicinal plants indigenously used in Nigeria against Malaria. In Willey J.M, Sherwood L.M. and Woolverton, C.J. Eds. *Proceedings of the 4th Walter Sisulu University International Research Conference.17 – 19th August 2011*. Eastern Cape, South Africa. 9-19pp. Copyright© WSU 2014.

(d) Patents: Nil

(e) Articles that have already appeared in learned journals:

2. Kinuthia G.K., **Afolayan F. I. D**., Ngure V. and Anjili C.O. (2012). Selected practices among rural residents versus the prevalence of Amoebiasis and Giardiasis in Njoro District, Kenya. *African Journal of Health Sciences* Vol. 20: 11-20.

3. Awobode H. O., Fagbemi F. T. and **Afolayan F. I. D.** (2015). Antitrypanosomal activity of *Khaya senegalensis* and *Anogeissus leiocarpus* stem bark on *Trypanosoma brucei brucei* infected rats. *African Journal of Biotechnology* Vol. 14. No. 6: 525 – 529.

4. **Afolayan F. I. D.**, Adegbolagun O.M., Irungu B., Orwa J., Kangethe L., and Anumudu C.I. (2016). Antimalarial actions of *Lawsonia inermis*, *Tithonia diversifolia* and *Chromolaena odorata* in combination. *Journal of Ethnopharmacology* Vol. 191: 188–194..

5. Busari Z. A, Dauda K. A, Morenikeji O. A, **Afolayan F**., Oyeyemi O. T, Meena J., Sahu D. and Panda A. (2017). Antiplasmodial Activity and Toxicology Assessment of Curcumin PLGA-encapsulated nanoparticles. *Frontiers in Pharmacology* Vol. 8: 622.

6. Dauda K., Busari Z., Morenikeji O., **Afolayan F**., Oyeyemi O., Meena J., Sahu D.and Panda A. (2017). Poly (D, L-lactic-co-glycolic acid)-based artesunate nanoparticles; formulation, antimalarial and toxicity assessments. *Journal of Zhejiang University-Science* B Vol. 18 No. 11: 977-985.

7. **Afolayan F. I. D**, Erinwusi B. and Oyeyemi O. T. (2018). Immunomodulatory activity of curcumin-entrapped poly d, 1-lactic-co-glycolic acid nanoparticles in mice. *Integrative Medicine Research* Vol. 7, 168 – 175.

8. Oyeyemi O. T., Morenikeji O., **Afolayan F**., Dauda K., Busari Z., Meena J., Sahu D. and Panda A. (2018). Curcumin-Artesunate Based Polymeric Nanoparticle; Antiplasmodial and Toxicological Evaluation in Murine Model. *Frontiers in Pharmacology* Vol. 9: 562.

9. **Afolayan F. I. D.,** Ayinde E.M. (2019). *In silico* Antimalarial Docking and Admet Studies of Phytocompounds Derived from *Tithonia diversifolia*. *Journal of Science Research* Vol. 18: 35-46.

10. **Afolayan F. I. D**, Oladokun A. and Fasoranti E. (2020). Comparative *in vivo* Antiplasmodial activities of different extracts of *Lawsonia inermis, Tithonia diversifolia* and *Nauclea latifolia* against *Plasmodium berghei*. *African Journal of Biological Sciences* Vol. 2 No.1: 9-17.

11. Lazarus D. D., **Afolayan F. I. D**, Mamo G., Dinga J. N., Akinbobola J., Duedu K. O., Tshifhiwa N., Kassa T., Nene V., Dieye Y., Oumouna M. (2020) African Vaccinology Network (AfVANET): an African network by African scientists. *Pan African Medical Journal* 37 (66): 1-4.

12. **Afolayan F. I. D**, Sulaiman K. A. and Okunade W. T. (2020). Ethnobotanical survey of plants used in cancer therapy in Iwo and Ibadan, South-Western of Nigeria. *Journal of Pharmacy and Pharmacognosy Research* Vol. 8 No. 5: 346 – 367.

13. **Afolayan F. I. D**, Adegbolagun O., Nwikwabe N.N., Orwa, J., Anumudu, C.I.A. (2020). Cytokine modulation during malaria infection by some medicinal plants. *Scientific African* 8, e0042.

14. Oriade, T. O., Alao O. S. and **Afolayan, F. I. D** (2021). Immunostimulatory Effect of *Phoenix Dactylifera* Supplemented Diet on *Aeromonas hydrophila* Infected *Clarias gariepinus Pan African Journal of Life Sciences* Vol. 5 No. 1: 214-224.

15. **Afolayan F. I. D**. and Ijidakinro O. D. (2021). *In silico* antiparasitic investigation of cmpounds derived from *Andrographis paniculata* on some parasites validated drug targets. *African Journal of Biological Sciences* Vol. 3 No. 3: 93-110.

16. Akinlalu A. O., Chamundi A., Yakumbur D. T., **Afolayan F. I. D**., Duru I. A., Arowosegbe M. A and Enejoh O. A. 2021. Repurposing FDA-approved drugs against multiple proteins of SARS-CoV-2: An *in-silico* study. *Scientific African* Vol. 13: e00845.

17. **Afolayan F. I. D**; Abdulkareem M. (2021). *In Silico* Prediction of Antiplasmodial and Anti-Inflammatory Potentials of Compounds Derived from *Vernonia amygdalina*. *Bulletin of the Science Association of Nigeria* Vol. 32: 56 – 79. (Nigeria) (Contribution: 80%).

18. **Afolayan F. I. D**. and Sowemimo R. (2022). Ethnobotanical study of plants used for treating intestinal worms in Ibadan, Nigeria. *The Zoologist* Vol. 20:32-40.

19. **Afolayan F. I. D**., Adegbolagun O., Irungu B., Orwa, J., Anumudu C. (2023) Antimalarial potential of five Nigerian medicinal plants: Repository versus curative activities. *INNOSC Theranostics and Pharmacological Sciences* Vol. 6 (2).

20. **Afolayan F. I. D**, Tarkaa C. T. (2023) Network pharmacology-based assessment of anti-inflammatory action of phytocompounds derived from *Nigella sativa* and *Moringa oleifera. Drug Discovery* Vol. 17:e13dd1016.

21. **Afolayan F. I. D**, Ibrahim S. (2023) Computational simulations of phytoconstituents derived from *Phyllanthus amarus* against *Plasmodium falciparum* molecular targets. *Drug Discovery* Vol. 17: e26dd1937.

22. **Afolayan, F. I. D**., Salaam, R. A. (2023) Elucidation of Antiplasmodial activity of Phytocompounds in *Nauclea latifolia*: *In silico* approach. *Journal of Science Research* Vol. 20: 120 - 148.

23. Afolayan F. I. D., Deborah G. Joseph D. G., Salaam R. A. (2023) Network pharmacology-based findings of the immunomodulatory activity of phytocompounds from *Withania somnifera* and *Aloe barbadensis INNOSC Theranostics and Pharmacological Sciences 1076* https://doi.org/10.36922/itps.1076

24. Afolayan F. I. D; Abdulkareem M. (2021). *In Silico* Prediction of Antiplasmodial and Anti-Inflammatory Potentials of Compounds Derived from *Vernonia amygdalina*. *Bulletin of the Science Association of Nigeria* Vol. 32: 56 – 79.

25. **Afolayan F. I. D.**, Ketenfe M., Adesoye S. D. (2023). Ethnobotanical Survey of Medicinal Plants Traditionally used to Boost Immunity in Oyo State, Southwestern Nigeria. *Nigerian Journal of Immunology* Vol. 4:36-44.

26. Salaam R. A. and **Afolayan F. I. D** (2024). Antiplasmodial mechanism of *Lawsonia inermis*: An *in silico* based investigation. *Infectious Diseases Research* Vol. 5 (1): DOI:10.53388/IDR2024003

27. **Afolayan F. I. D** and Oladokun S. A. (2024). *In silico* antiplasmodial effects of phytocompounds derived from *Andrographis paniculata* on validated drug targets of different stages of *Plasmodium falciparum*. *Infectious Diseases Research* Vol.5 (2):6.

28. Afolayan F. I. D., Salaam R. A., Oladokun E. S., Adesoye S. D. (2024). A Review of Selected Parasitic Plants in Nigeria: Converting Harms to Benefits. *Natural Therapy Advances* 7 (3): 14

29. Afolayan F. I. D., Odeyemi R. A., Salaam R. A. (2024) *In silico* and *In vivo* Evaluations of Multistage Antiplasmodial Potency and Toxicity Profiling of n-Hexadecanoic acid derived from *Vernonia amygdalina*. *Experimental Pharmacology and drug discovery* 15 doi: 10.3389/fphar.2024.1445905.

XI. Major Conferences/Workshops Attended with Papers Read (in the last 5 years)

Presentations at Conferences/Workshops (in the last 5 years)

1. Facilitation of a Virtual International *In Silico* Research Workshop on Molecular Docking, Network Pharmacology, QSAR and ADMET. 5 – 8 and 19 - 22 February, 2024
   Papers Read: Introduction to Computer-Aided Drug Design; Introduction to Molecular Docking and Its Applications; Introduction to Computer-Aided ADMET and its Relevance to Drug Discovery; Introduction and Relevance of Network Pharmacology; Gene Ontology and KeGG Pathways – Key Parts in Elucidation of Molecular Mechanisms (Oral virtual presentation).

2. Forum of Nigerian Toxicologists (FONTOX). 2ND Biennial National Conference 21 – 24 November, 2023. University of Ibadan, Nigeria
   Paper Read: Afolayan F. I. D. *In silico* Approaches to Toxicology

3. International Veterinary Vaccinology Network Early Career Researcher Workshop. 20-24 March 2023. The University of Edinburgh, Easter Bush, Scotland, U.K
   Paper Read: Afolayan F. I. D. Communicating with non-scientists: A case of IVVN Africa Schools Outreach in Nigeria.

4. North-South Scientific Online Meeting on Natural Products by Research Awake Africa Initiative on 6-8 February, 2023.
   Paper Read: Afolayan F.I.D., Abdulkareem M., Odeyemi R., Adesoye S. *In silico* and *In vivo* Antiplasmodial and Immunomodulatory effects of *Anogeisus leiocarpus* derived in n-Hexadecanoic acid (Oral virtual presentation).

5. 2022 Pharma-Food Conference on 4-7 October at Landmark University, Omu-Aran, Kwara State, Nigeria.
   Paper Read: Afolayan Funmilayo I. D. and Mutiu O. Ethnobotanical Survey of Medicinal Plants with Immunostimulatory Properties in Oyo State, Nigeria (Oral Presentation).

6. Drug discovery and development colloquium 2022 on 22 July, 2022. Held virtually and hosted by the American Association of Pharmaceutical Scientists (AAPS) student chapters of the University of Arkansas for Medical Sciences and the University of Louisiana at Monroe.
   Paper Read: Afolayan Funmilayo I.D., Abdulkareem Muyidat, Ijidakinro Sekemi. An *in silico* study of Antiplasmodial and Anti-inflammatory potentials of compounds derived from *Anogeisus leiocarpus* (Poster presentation).

7. 54th Annual (HYBRID) Conference of the Science Association of Nigeria "OLUYOLE 2021" on Securing the Nigerian Environment through Science, Technology, and Innovation (STI). 20 – 24 June 2021; Faculty of Science, University of Ibadan, Ibadan Nigeria.

Paper Read: Afolayan F. I. D. and Abdulkareem M. *In silico* prediction of antiplasmodial and anti-inflammatory potentials of compounds derived from *Vernonia amygdalina* (Oral Presentation).

8. Keystone Symposia on the Malaria Endgame: Innovation in Therapeutics, Vector Control and Public Health Tools. October 2 – November 2, 2019. Addis Ababa, Ethiopia.
   Paper Read: **Afolayan F. I. D.** and Ayinde E.M. *In Silico* Docking of Phytocompounds Derived from *Tithonia diversifolia* Against *Plasmodium falciparum* Molecular Targets (Poster presentation)

9. African Vaccinology Network (AfVANET) Scientific Workshop Nairobi, Kenya 19-20 March 2019.
   Paper Read: Afolayan F. I. D. Towards the discovery of Adjuvants and Immunomodulators for Infectious Diseases from Botanicals (Oral Presentation).

XII Ten Best Publications that Reflect the Totality of my Contributions to Scholarship

1. **Afolayan F. I. D.**, Adegbolagun O.M., Irungu B., Orwa J., Kangethe L., and Anumudu C.I. (2016). Antimalarial actions of *Lawsonia inermis*, *Tithonia diversifolia* and *Chromolaena odorata* in combination. *Journal of Ethnopharmacology* Vol. 191: 188–194. (Ireland) (Contribution: 50%).

2. **Afolayan F. I. D**, Erinwusi B. and Oyeyemi O. T. (2018). Immunomodulatory activity of curcumin-entrapped poly d, 1-lactic-co-glycolic acid nanoparticles in mice. *Integrative Medicine Research* Vol. 7, 168 – 175. (Korea) (Contribution: 70%)

3. Oyeyemi O. T., Morenikeji O., **Afolayan F**., Dauda K., Busari Z., Meena J., Sahu D. and Panda A. (2018). Curcumin-Artesunate Based Polymeric Nanoparticle; Antiplasmodial and Toxicological Evaluation in Murine Model. *Frontiers in Pharmacology* Vol. 9: 562 (Switzerland) (Contribution: 25%).

4. **Afolayan F. I. D**, Sulaiman K. A. and Okunade W. T. (2020). Ethnobotanical survey of plants used in cancer therapy in Iwo and Ibadan, South-Western of Nigeria. *Journal of Pharmacy and Pharmacognosy Research* Vol. 8 No. 5: 346 – 367 (Chile) (Contribution: 70%).

5. **Afolayan F. I. D**, Adegbolagun O., Nwikwabe N.N., Orwa, J., Anumudu, C.I.A. (2020). Cytokine modulation during malaria infection by some medicinal plants. *Scientific African* Vol. 8, e0042 (South Africa) (Contribution: 50%).

6. Oriade, T. O., Alao O. S. and **Afolayan, F. I. D** (2021). Immunostimulatory Effect of *Phoenix Dactylifera* Supplemented Diet on *Aeromonas hydrophila* Infected *Clarias gariepinus Pan African Journal of Life Sciences* Vol. 5 No. 1: 214-224 (Nigeria) (Contribution: 60%).

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XIII. Research Focus

My research focuses on Cellular Parasitology, Immunology, and Ethnopharmacology, particularly on malaria and infectious diseases. I have integrated Cellular and Molecular Biology with Bioinformatics tools to investigate the antiplasmodial and immunomodulatory properties of medicinal plants such as *Nauclea latifolia*, *Morinda lucida*, *Lawsonia inermis*, *Tithonia diversifolia*, and *Chromolaena odorata*. These studies, conducted *in vitro* and *in vivo*, revealed promising therapeutic and prophylactic potentials for malaria treatment. I found that *M. lucida*, *L. inermis*, and *N. latifolia* have both antiplasmodial and immunomodulatory properties, making them strong candidates for antimalarial drugs. However, combining *Chromolaena odorat*a with *Tithonia diversifolia* and *Lawsonia inermis* showed potential antagonistic effects. My research also highlighted the importance of using these plants for prevention rather than cure.

I have conducted ethnobotanical surveys in Kwara, Osun, and Oyo States to document the traditional use of medicinal plants for malaria, intestinal worms, and cancer, contributing to bioprospecting and drug development. Additionally, I evaluated the immunostimulatory effects of *Phoenix dactylifera* fruit powder, which enhanced immunity and reduced DNA damage in *Aeromonas hydrophila*-infected *Clarias gariepinus*.

Recognizing the significance of Bioinformatics, I used computational approaches, including molecular docking, Network Pharmacology, and Molecular Dynamic Simulation, to identify key phytocompounds like n-Hexadecanoic acid from *Vernonia amygdalina* and squalene from *Nauclea latifolia*, confirming their antiplasmodial potential. I have also explored nanoparticulate curcumin, demonstrating its enhanced efficacy compared to free curcumin. Similarly, through the use of Reverse Vaccinology Approaches which make use of Immunoinformatics tools, I have designed some multi-epitope vaccine constructs for Malaria, Ascariasis and Trichuriasis.

In addition, I have been involved in repurposing FDA-approved drugs for SARS-CoV-2 and malaria, identifying several drugs like naloxone and olaparib as potential candidates. My work aims to accelerate drug development and preserve traditional medicinal knowledge while advancing modern therapeutic solutions.