

OMOTOLA D. GBADEGESIN, Ph.D., R.Ph.

Hyattsville, MD 20782 | tolagbadegesin@gmail.com | +1 (240) 898-8896 | ORCID: 0000-0003-0733-5332

Bibliography

EDUCATION

- 08/2020 – 01/2024 *Ph.D.*, Pharmaceutical Sciences, **Howard University**, Washington, DC, USA
- 06/2016 - 11/2020 *Fellowship*, Public Health Pharmacy, West African Postgraduate College of Pharmacists, Lagos, Nigeria
- 04/2015 – 10/2017 *M.Sc.*, Pharmaceutics, **Obafemi Awolowo University**, Ile-Ife, Nigeria
- 09/2006 – 12/2011 *B.Pharm.*, Pharmacy, **Obafemi Awolowo University**, Ile-Ife, Nigeria
- Overall best graduating student in Pharmacy School and the University, with a total of 10 academic prizes

TECHNICAL SKILLS

- Grant proposal writing; Experimental design; Project management
- Molecular biology: Western blotting, PCR, RT-qPCR, CRISPR-based drug screens
- Cell biology: 2D/3D cell culture, cell-based drug assays, flow cytometry
- Synthetic chemistry: Solid phase peptide synthesis, coupling reactions, preparative HPLC, freeze-drying
- Analytical techniques: TLC/column chromatography, RP-HPLC, LC/MS, FT-IR, NMR, particle size and zeta potential analysis, basket dissolution
- Pharmaceutics: Compounding, nanoparticle, multiple emulsion, and suppository formulation
- Computer Skills: Proficient in Excel, PowerPoint, Word; Experience using SPSS, Python, R Studio, BioRender, EndNote, LabArchives

PROFESSIONAL CERTIFICATION / LICENSE

- 08/2025 Basic Life Support (CPR and AED) Provider, American Heart Association
- 07/2025 Maryland State Board of Pharmacy – active registered pharmacist
- 12/2022 NABP Foreign Pharmacy Graduate Equivalency Committee (FPGEC)
- 04/2012 Pharmacy Council of Nigeria – registered pharmacist

RESEARCH EXPERIENCE

- 02/2024 – present **Postdoctoral Fellow**, Multidrug Resistance Section, Center for Cancer Research, National Cancer Institute, National Institutes of Health (NIH), Bethesda, MD
Mentor: Michael M. Gottesman, M.D.
- Design and manage research projects to investigate the mechanisms of resistance of ovarian cancer and hepatocellular carcinoma to targeted therapies
 - Present findings at lab and institute-wide meetings using power-point and poster formats
 - Peer review of manuscripts submitted to scientific journals
 - Conceptualized, wrote, and submitted proposals for competitive grants
- 06/2022 – 08/2022 **Graduate Intern**, Translational Molecular Pathology Department, MD Anderson Cancer Center, Houston, Texas
Principal Investigator: Lawrence Kwong, Ph.D.
- Investigated the effect of a triple drug combination by performing growth inhibition assay, Western blotting, and gene-set enrichment analysis in urothelial cancer cell lines
 - Presented the research findings in a scientific poster presentation and won the best prize
- 06/2021 – 07/2022 **Research Assistant**, Center for Women, Gender, and Global Leadership, Howard University, Washington, DC
Principal Investigator: J. Jarpa Dawuni, Ph.D.
- Compiled data from archives on faculty members at Howard University Colleges of Pharmacy and Medicine; Analyzed the data on gender demographics and women leadership; Authored two chapters in the center's working paper series [\[Link\]](#) [\[Link\]](#)

- 01/2021 – 01/2024 **Graduate Research Assistant**, Department of Pharmaceutical Sciences, Howard University, Washington, DC
Principal Investigator: Simeon K. Adesina (Ph.D., R.Ph.)
- Synthesized novel polymer-drug conjugates using SPAAC-mediated step-growth polymerization for combination treatment of ovarian cancer
 - Developed a reversed-phase HPLC method for monitoring the release of doxorubicin and gemcitabine from synthesized drug conjugates
 - Investigated the effect of drug properties on the drug loading and drug release of polymeric nanoparticles prepared by the emulsification-solvent evaporation method

TEACHING EXPERIENCE

- 05/2021 – 07/2021 **Tutor**, Howard University College of Pharmacy, Center of Excellence, Washington, DC
- Taught 26 college students in the Advanced Summer Enrichment Program 'Introductory Organic Chemistry' using a combination of online lectures, reviews, group tasks, and assignments
- 02/2019 – 12/2020 **Lecturer II**, Department of Pharmaceutics, Obafemi Awolowo University, Ile-Ife, Nigeria
- Taught 200 to 400-level pharmacy undergraduates' courses, including 'Liquid and Semisolid Dosage Forms', 'Pharmaceutical Dispensing', 'Extemporaneous Compounding', and 'Solid Dosage Forms'
 - Coordinated 300-level undergraduate courses in the Department
- 05/2012 – 05/2013 **Demonstrator**, Department of Pharmaceutics, Obafemi Awolowo University, Ile-Ife, Nigeria
- Taught undergraduate students 'Pharmaceutical Dispensing' and 'Tableting' practical classes

PHARMACY PRACTICE EXPERIENCE

- 02/2023 – 01/2024 **Pharmacy Intern**, Padek Healthcare Pharmacy, Bladensburg, MD
- Performed prescription data entry, prescription processing, medication preparation, patient counseling, and other tasks as directed by the licensed pharmacist
 - Provided customer service, both in person and by answering phone calls
 - Communicated with physicians to clarify prescription orders or obtain approval for new medications
 - Performed clerical duties such as filing patient records and processing insurance claims
- 02/2018 – 01/2019 **Full-time Pharmacist**, Nett Pharmacy Limited, Lagos, Nigeria
- Supervised two pharmacy assistants and two intern pharmacists per work shift
 - Provided medication education and counseling to clients
 - Measured and recorded patients' vital signs – body mass index, blood pressure, and blood glucose – for easy referral and follow up
 - Proactively offered vaccination services to clients; documented and followed up on their vaccination schedules through phone calls
 - Managed drug inventory to ensure 'zero' expiry and out-of-stock
- 06/2014 – 12/2015 **Superintendent Pharmacist**, Irawo Pharmacy, Ile-Ife, Nigeria
- Supervised sales and daily running of the pharmacy in addition to full-time pharmacist roles.
- 06/2013 – 05/2014 **Pharmacist**, Hospitals Management Board, Abia State, Nigeria
- Provided pharmacy services at the Federal Medical Center Dental Clinic
 - Managed drug acquisition and inventory
 - Volunteered with FHI-360 to do the inventory of antiretroviral drugs supplied to community health workers using the Combined Report-Requisition and Report Issue Form

HONORS & SPECIAL ACHIEVEMENTS

2025	Selected as the institutional nominee by the Center for Cancer Research, NIH, for the NCI early K99/R00 Molecular/Precision Cancer Prevention category
2024 to date	Department of Health and Human Services Visiting Fellow Award, NIH Visiting Program, National Cancer Institute, USA
2023 – 2024	Just-Julian Graduate Research Fellowship, Howard University, USA
2023	Esther Ottley Fellowship, Howard University, USA
2022	Poster Competition Best Prize Winner, MD Anderson Cancer Center Partnership for Careers in Cancer Science and Medicine, Texas, USA
2020 – 2023	Edward Alexander Bouchet Doctoral Scholars Fellowship, Howard University, USA
2015 – 2017	Postgraduate Scholarship, Stephen Oluwole Awokoya Foundation for Science Education, Nigeria
2012	Chancellor prize for the best overall student with the highest number of prizes in 2010/2011 Session in OAU, Nigeria; Pharmacy Council of Nigeria prize for the best graduating student in the Faculty of Pharmacy; Dean's Prize for the best final year project dissertation in the Faculty of Pharmacy; Faculty prize, Ciba prize, Duro Emmanuel prize, Francis Omokeyin Ogungbamila prize, and Professor Festus Adio Ogunbona prize for the overall best performance in the final B. Pharm degree examination; The Boots Pure Drug prize for the best student in Pharmaceutics, George Iketubosin prize for best student in Pharmaceutical Chemistry, Synergy healthcare limited prize for the best student in Clinical Pharmacy and Pharmacy Administration, and the Pharmaceutical Society of Nigeria Board of Fellows award for the best student in Pharmacognosy in the part V B. Pharm degree examination, OAU, Nigeria
2010 – 2011	Carnegie Sponsored Scholarships for Female Undergraduate Students, OAU, Nigeria
2006	First position in West African Senior Secondary Certificate Examination in Osun State, Nigeria
2003 – 2011	Segun Aina Foundation Scholarship Award, Nigeria

PROFESSIONAL MEMBERSHIPS & HONOR SOCIETIES

2025	Associate Member, American Association for Cancer Research (AACR)
2024	Member, Rho Chi Pharmacy Honor Society (Beta Sigma Chapter, Howard University)
2021	Member, American Association of Pharmaceutical Scientists (AAPS)
2020	Fellow, West African Postgraduate College of Pharmacists

VOLUNTEER ACTIVITIES

2022 to date	Member , AAPS Newsmagazine editorial content committee <ul style="list-style-type: none">Attend monthly one-hour meetings to review suggested topics and articles for publicationGenerate content for the newsmagazine by writing articles and inviting potential authors. Contributed 6 magazine articles.
2022 – 2023	Student ambassador , Howard University Graduate School <ul style="list-style-type: none">Connected with prospective and new students to assist them with graduate school applications and general school-related questions via 'Unibuddy' and the University's website

SUBMITTED GRANT APPLICATIONS

2025	Mechanisms of acquired resistance to antibody-drug conjugates in ovarian cancer cells (1K99CA307621-01) – NCI Pathway to Independence Award for Early-Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Not Allowed)
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2022	Development of a Targeted Polymer-Drug Conjugate for Ovarian Cancer Combination Therapy (2022PHRMA0PDDL000234584) – PhRMA Foundation Predoctoral Fellowship in Drug Delivery
2019	Development and optimization of bacitracin co-formulated with African walnut seed extract for chronic skin wound healing (1I1_F_040267, Session 2020-S) – International Foundation for Science

POSTER PRESENTATIONS

- Gemcitabine/Doxorubicin-Combination Polymer-Drug Conjugate Synthesized by SPAAC Click Chemistry: Characterization and Evaluation in OVCAR-3 Ovarian Cancer Cells. AAPS PharmSci 360, October 20-23, 2024, Salt Lake City, Utah
- Roles of methyltransferases in the development of resistance to thiol-based histone deacetylase inhibitors. NIH Research Festival, September 24, 2024, NIH Bethesda, Maryland
- Development of Targeted Polymer-Drug Conjugates for Ovarian Cancer Chemotherapy. Pharmacy Education 2023, American Association of Colleges of Pharmacy Annual Meeting, July 23-25, 2023, Aurora, Colorado
- Targeted Combination Therapy Improves Erdafitinib Efficacy in Urothelial Cancer. MD Anderson Cancer Center PCCSM Summer Research Experience Poster Competition, August 11, 2023, MD Anderson Cancer Center, Houston, Texas.
- Quantitative Effects of Drug-Base Ratio on Physical and Release Properties of Paracetamol Suppositories. Nigeria Association of Pharmacists in Academia 13th National Conference and Scientific Meeting, August 10-14, 2015, University of Ibadan, Nigeria.

PUBLICATIONS

- “Identification of antibody-drug conjugate payloads which are substrates of ATP-binding cassette drug efflux transporters” (with Roth, J.S., Guo, H., Chen, L., Shen, M., Robey, R.W., Gottesman, M.M., & Hall, M.D.), bioRxiv, 2025.05.22.651305 [\[Link\]](#)
- “Gemcitabine–Doxorubicin Combination Polymer-Drug Conjugate Prepared by SPAAC Click Chemistry: In Vitro Characterization” (with Adesina, S.K.), 2025, International Journal of Molecular Sciences, 26(6), 2798 [\[Link\]](#)
- “Synthesis and Characterization of Polymer-Drug Conjugates by Strain-Promoted Azide-Alkyne Cycloaddition-Mediated Polymerization” (with Adesina, S.K.), 2025, Journal of Applied Polymer Science, e56928 [\[Link\]](#)
- “Prescribing Pattern and Errors in the Prescriptions for Outpatients with Diabetes Mellitus at a Nigerian University Health Centre” (with Adeyemi, O.I.), 2024, The Nigerian Journal of Pharmacy, 58(2), 213-218 [\[Link\]](#)
- “Ovarian Cancer Chemotherapy: Targeted Drug Conjugate Systems’ (Olajubutu, O., & Adesina, S.K.), 2024, Pharmaceutical Research - Recent Advances and Trends, 1, 101-155 [\[Link\]](#)
- “Targeted drug conjugate systems for ovarian cancer chemotherapy” (with Olajubutu, O., & Adesina, S.K.), 2023, Biomedicine & Pharmacotherapy, 165, 115151 [\[Link\]](#)
- “Development of Targeted Polymer-Drug Conjugates for Ovarian Cancer Chemotherapy” (with Adesina, S.K.), 2023, American Journal of Pharmaceutical Education, 87(8):100515 [\[Link\]](#)
- “Drug Delivery Strategies for the Treatment of Pancreatic Cancer” (with Olajubutu, O., Adebayo, A., & Adesina, S.K.), 2023, Pharmaceutics, 15, 1318 [\[Link\]](#)
- “Approaches to Improve Macromolecule and Nanoparticle Accumulation in the Tumor Microenvironment by the Enhanced Permeability and Retention Effect” (with Ejigah, V., Owoseni, O., Bataille-Backer, P., Fisusi, F.A., & Adesina, S.K.), 2022, Polymers, 14, 2601 [\[Link\]](#)
- “Water-In-Oil-In-Water Multiple Emulsions of Ibuprofen for Pediatrics Using African Walnut Seed Oil” (with Oladimeji, F.A.), 2019, Journal of Applied Pharmaceutical Research, 7(1): 8-22 [\[Link\]](#)
- “Quantitative evaluation of effects of drug concentrations and densities on their displacement factors in suppository bases” (with Oladimeji, F.A., Akinrinola, I.A., Dawodu, T.A., & Bankole, V.O.), 2018, Journal of Chemical and Pharmaceutical Research, 10(2): 32-39 [\[Link\]](#)

- “Quantitative Analysis of the Effects of Drug-Base Ratio on the Physical and Release Properties of Paracetamol Suppositories” (with Oladimeji, F.A., & Bankole, V.O.), 2017, The Pharma Innovation Journal, 6(9): 190-196 [[Link](#)]

SELECTED SEMINARS & TRAININGS

- The Mouse Workshop: Safe Handling and Techniques, Office of Animal Care and Use, NIH. July 22, 2025.
 - Translational Research in Clinical Oncology (TRACO) course, Center for Cancer Training, NIH. September 3 – November 25, 2024.
 - Night Science – a course on the creative scientific process, Center for Cancer Training, NIH. July 28 – August 22, 2024.
 - Virtual K Grant Working Group workshop, Cancer Training, NIH. Apr 4 – May 30.
 - Translational Science Training Program (TSTP) Bootcamp, Office of Intramural Training and Education, NIH. April 1 – 2, 2024.
 - Method Development and Troubleshooting Approaches in High-Performance Liquid Chromatography, Agilent Technologies – Howard University College of Pharmacy, Washington, DC. February 14, 2023.
 - Preparing Future Faculty Summer Institute, Howard Hampton Morgan State – Alliance for Graduate Education and the Professoriate, Washington, DC. Held on August 26-27, 2022.
 - Advanced Statistical Methods using SPSS, Howard University Summer Research Institute, Washington, DC. Held on May 24-28, 2021.
 - Basic Methodologies of Teaching, Promoting Excellence in Teaching, Obafemi Awolowo University, Nigeria. Held on September 2-11, 2019.
 - Field Epidemiology and Disease Outbreak Management, African Field Epidemiology Network, Lagos, Nigeria. Held on August 29-31, 2019.
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