

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

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## [Bibliography](#)

### EDUCATION

08/2020 – 01/2024 Ph.D., Pharmaceutical Sciences, **Howard University**, Washington, DC, USA

04/2015 – 10/2017 M.Sc., Pharmaceutics, **Obafemi Awolowo University**, Ile-Ife, Nigeria

09/2006 – 12/2011 Bachelor of Pharmacy (Distinction), **Obafemi Awolowo University**, Ile-Ife, Nigeria

- Overall best graduating student in pharmacy school and the University, with a total of 10 academic prizes

### PROFESSIONAL CERTIFICATION / LICENSE

07/2025 The Maryland State Board of Pharmacy – active registered pharmacist

12/2022 NABP Foreign Pharmacy Graduate Equivalency Committee (FPGEC)

11/2020 West African Postgraduate College of Pharmacists – public health pharmacy consultant

04/2012 Pharmacy Council of Nigeria- registered pharmacist

### RESEARCH EXPERIENCE

02/2024 – present Postdoctoral Fellow, Multidrug Resistance Section, Laboratory of Cell Biology, 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 to discuss research efforts and receive feedback
- Peer review of manuscripts submitted to scientific journals
- Conceptualize, write, and submit grant proposals

06/2022 – 08/2022 Graduate Intern, Translational Molecular Pathology Department, MD Anderson Cancer Center, Houston, Texas

Principal Investigator: Lawrence Kwong, Ph.D.

- Conducted growth inhibition assay, Western blot, and GSEA to validate the result obtained from a genome-scale CRISPR/Cas-9 knock-out screen for the modifiers of sensitivity to erdafitinib 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 female faculty members at Howard University Colleges of Pharmacy and Medicine
- Data analysis and report on gender demographics and women leadership

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 doxorubicin and gemcitabine-coupled monomers for SPAAC-mediated step-growth polymerization, enabling the formation of cathepsin B-cleavable polymer-drug conjugates (PDCs)
- Developed a reversed-phase HPLC method for monitoring the release of doxorubicin and gemcitabine from synthesized drug conjugates
- Evaluated the cytotoxicity of doxorubicin/gemcitabine PDCs in OVCAR3 ovarian cancer cell line
- 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 – Tutor, Howard University College of Pharmacy, Center of Excellence, Washington, DC
- 07/2021
- 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 – Lecturer II, Department of Pharmaceutics, Obafemi Awolowo University, Ile-Ife, Nigeria
- 12/2020
- 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
  - Served on the Pharmacy Induction Ceremony Committee
- 05/2012 – Demonstrator, Department of Pharmaceutics, Obafemi Awolowo University, Ile-Ife, Nigeria
- 05/2013
- Taught undergraduate students 'Pharmaceutical Dispensing' and 'Tableting' practical classes
  - Conducted research on the reformulation of 'Concentrated Peppermint Oil Emulsion BP' using mixed surfactants as my internship project

## PHARMACY PRACTICE EXPERIENCE

- 02/2023 – Pharmacy Intern, Padek Healthcare Pharmacy, Bladensburg, MD
- 01/2024
- Entered and processed prescription data, prepared medications for dispensing under the supervision of a licensed pharmacist
  - Provided medication information to clients both in person and over the phone, ensuring excellent customer service and patient support
- 02/2018 – Full-time Pharmacist, Nett Pharmacy Limited, Lagos, Nigeria
- 01/2019
- Supervised two pharmacy assistants and two intern pharmacists per work shift
  - Provided medication education and counseling to clients
  - Documented and followed up on clients' vaccination schedules
  - Managed drug inventory to ensure 'zero' expiry and out-of-stock
- 06/2014 – Superintendent Pharmacist, Irawo Pharmacy, Ile-Ife, Nigeria
- 12/2015
- Supervised sales and daily running of the pharmacy in addition to full-time pharmacist roles.
- 06/2013 – Pharmacist, Hospitals Management Board, Abia State, Nigeria
- 05/2014
- Assisted the pharmacy director at a community general hospital
  - Served as the pharmacist 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 early K99/R00 February 2025 submission cycle in the 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
2003 – 2011	Segun Aina Foundation Scholarship Award, Nigeria
2006	First position in West African Senior Secondary Certificate Examination in Osun State, 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)
2023	Member, American Association of Colleges of Pharmacy (AACP)
2021	Member, American Association of Pharmaceutical Scientists (AAPS)
2020	Fellow, West African Postgraduate College of Pharmacists
2012	Member, Pharmaceutical Society of Nigeria

## **VOLUNTEER ACTIVITIES**

2022 to date	Member, AAPS Newsmagazine editorial content committee <ul style="list-style-type: none"> <li>Attend monthly one-hour meetings to review suggested topics and articles for publication</li> <li>Generate content for the newsmagazine by writing articles and inviting potential authors. Contributed 6 magazine articles.</li> </ul>
2022 – 2023	Student ambassador, Howard University Graduate School <ul style="list-style-type: none"> <li>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</li> </ul>
2021 – 2022	Secretary, AAPS - Howard University student chapter <ul style="list-style-type: none"> <li>Documented the minutes of different meetings by the executive and general members</li> </ul>

## **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)
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, AACP 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.

## JOURNAL 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 [\[Link\]](#)