Education

- **2005 - 2010:** Postdoctoral Research Fellow, Sidney Kimmel Comprehensive Cancer Center, Division of Oncology/Hematology, **Johns Hopkins University**, Baltimore, MD. Advisor: Steven D. Gore, MD

- **2001 - 2005:** Doctor of Philosophy (Ph.D.), School of Pharmacy, Department of Pharmaceutical Sciences, **University of Maryland at Baltimore**. Advisor: Rakesh Srivastava, Ph.D.

- **1999 - 2001:** Master of Science, School of Pharmacy, Department of Pharmaceutical Sciences, **University of Southern California**, Los Angeles, CA. Advisor: Vincent H Lee, Ph.D.

- **1989 - 1994:** B.Sc. in Pharmacy and Pharmaceutical Sciences, College of Pharmacy, FPCU.

Certifications and Licensure

- Board Certified Geriatric Pharmacist (BCGP).
- Vermont licensed pharmacist.
- West Virginia licensed pharmacist.
- Maryland licensed pharmacist (Inactive).

Employment

- **2019 – Present:** Chair, Department of Pharmaceutical & Administrative Sciences
- **2017 – Present:** Associate Professor of Pharmacology, School of Pharmacy, University of Charleston, WV
- **2010 - 2016:** Assistant Professor of Pharmaceutical Sciences, Albany College of Pharmacy and Health Sciences (Vermont Campus), Colchester, VT.
- **2011 – 2017:** Clinical Pharmacist, University of Vermont Medical Center (part time).
- **2008 – 2010:** Adjunct Faculty, Department of Biology, Community College of Baltimore County (CCBC), Baltimore, MD.

Teaching Experience

Pharm D program courses taught at the University of Charleston and Albany College of Pharmacy:

- **2017 – Present: Advanced Clinical Research (PHAR 633), 3 credit hours.** Topics include bioethics, Institutional IRBs, Independent IRBs, FDA structure and drug approval process, design of clinical trials, Epidemiology, Meta-analysis of clinical trials and biostatistics.

- **2017 – Present: Clinical Pharmacogenetics (PHAR 718), 3 credit hours.** Pharmacogenetics of anticancer drugs, oral anticoagulants and antiplatelet drugs.

- **2017 – Present: Pharmaceutics (PHAR 522), 3 credit hours.** Topics include drug development and approval process, solid dosage forms (powder, granules, tablets and capsules), transdermal drug delivery, Inhalation dosage forms, modified release and targeted drug delivery systems.

- **2017 – Present: Pharmacology (PHAR 612), 4 credit hours.** Pharmacodynamics of anticancer and CNS drugs.

- **2011 – 2016: Pharmacokinetics (PSC432), 3 credit hours.** Topics include one-compartment and multi-compartment models, drug dosing in special populations (renal, hepatic and obesity), dose adjustments in pediatric and geriatric population, Intravenous bolus administration, multiple drug administration, intermittent infusion, steady-state average concentrations, lithium and Theophylline drug monitoring and effect of disease state on their PK.

- **2011 - 2016: Pharmaceutics (PSC341), 3 credit hours.** Topics include biopharmaceutics, properties of solutions and solubility, solution dosage forms, kinetics and drug stability, dispersion dosage forms (suspensions, colloids and emulsions), pre-formulation, FDA drug approval process and industrial quality standards.

- **2013 – 2016: Principles of Pharmacogenomics (PHM590), 3 credit hours.** Topics include techniques for genomics, epigenomics and epigenetic therapy.

- **2011 – 2016: Pharmacology (PTP425), 2 credit hours.** Topics include hypothalamic and pituitary hormones, diabetes and antidiabetic drugs, Antithyroid drugs, drugs affecting calcium and phosphorus homeostasis, adrenocorticosteroids and adrenocortical antagonists, growth hormone and antagonists, posterior pituitary hormones and antagonists.

- **2011 - 2016: Pharmacology of drugs used in gastrointestinal (GI) diseases (PTP431), 2 credit hours.** The topics taught include acid suppressant therapy, drugs affecting GI motility and gastroesophageal reflux disease, inflammatory bowel diseases and short bowel syndrome, Drugs used in liver cirrhosis, Obesity and appetite suppressants.

- **2008 - 2010: Adjunct Faculty, Department of Biology, Community College of Baltimore County (CCBC).** Teaching duties include:
    - Course coordinator: Exploring Biology (Biology 100, 3 credit hours).
    - Course faculty: Molecular and Cellular Biology (Biology 110, 2 credit hours).

Research Experience

University of Charleston **2017 - Present**

Associate Professor, Department of Pharmaceutical & Administrative Sciences

- Development of direct inhibitors of DNA methyltransferase (DNMT) enzymes for treatment of hematologic malignancies. Currently, all the potent DNA hypomethylating agents act by an indirect mechanism that does not involve binding and inhibition of DNMT enzymes. We are developing compounds that bind and inhibit DNMT enzymes and testing their potential in treatment of hematologic malignancies.
- Investigating the genome-wide acetylation changes associated with the use of epigenetic therapy in hematological malignancies. Recently, we observed histone acetylation changes associated with the use of indirect DNMT inhibitors and demonstrated that these compounds can activate a subfamily of HDAC enzymes known as sirtuins. We are using ChIP-Seq approach to identify the histone acetylation changes in the whole genome associated with the use of DNMT inhibitors in primary leukemia cells.

Albany College of Pharmacy **2010 - 2016**

Assistant Professor, Department of Pharmaceutical Sciences

- Studying the mechanism of action of drugs that induce DNA methylation reversal (DNA hypomethylating agents) and histone modifications.
- Investigated the impact of DNA damage induced by epigenetic modifiers on cellular differentiation.
- Collaborated with the Computer Science Department at the University of Vermont to develop a software that can predict drug-drug interactions.

Johns Hopkins University **2005 - 2010**

Postdoctoral fellow (oncology/hematology)

- Participated in translational research study where bone marrow samples from acute myeloid leukemia (AML) patients in a phase 1 clinical study receiving sequential treatment of the DNMT inhibitor 5-azacytidine (Vidaza) and the histone deacetylase (HDAC) inhibitor entinostat were analyzed for DNA methylation reversal before and after the first cycle of treatment (28 days). The objective of the study was to develop a correlation between clinical response and DNA methylation reversal of candidate tumor suppressor genes, in order to use it as a biomarker for clinical response.
- Described the mechanism by which the DNA hypomethylating agent decitabine induces cell cycle arrest by a p53-dependent mechanism and how it is linked to DNA damage. The results

of the study highlighted the significance of detecting p53 mutations in AML patients receiving DNMT inhibitors therapy.

University of Maryland, School of Pharmacy **2001 - 2005**

Graduate student (Ph.D. program)

- Investigated the antitumor effect of the cytokine TRAIL and how the combination with histone deacetylase (HDAC) inhibitors or the synthetic flavonoid flavopiridol enhanced its antitumor effect. Our results provided combination therapy as a feasible solution to overcome tumor resistance to TRAIL.

University of Southern California, School of Pharmacy **1999 - 2001**

Graduate student (Master of Science)

- Investigated the transport of protein molecules across the lungs and proposed a mechanism for the transport of immunoglobulin G (IgG) across primary cultured alveolar epithelial cells by discovering the expression of the neonatal Fc (FcRn) receptor in these cells. Our results provided a rational for conjugating drugs to the Fc portion of IgG to enhance delivery to the lungs.

Honors and Awards

- Fellow member of the American College of Clinical Pharmacology (2018)
- ACPHS Provost Technology Award (2015): development of online hybrid pharmaceutics course for the Pharm D curriculum.
- American Association for Cancer Research (AACR)-Aflac incorporated scholar-in-training award (2009).
- Frank Slama School of Pharmacy meritorious graduate fellowship, University of Maryland (2004).
- Rho Chi pharmacy honor society (2005).
- Graduate school travel award, School of Pharmacy, University of Southern California (2001).
- Graduate Affairs Program Fellowship, School of Pharmacy, University of Southern California (2000).

Professional Society Memberships

- American College of Clinical Pharmacology (ACCP).
- The American Association for Cancer Research (AACR).
- The American Association of Pharmaceutical Scientists (AAPS).
- The American Association of Colleges of Pharmacy (AACP).

Reviewer Activity

- **Center for Scientific Review (CSR), NIH:** selected as early career reviewer (2014).

- **Editorial board member:**
  - Journal of Pharmacogenomics and Pharmacoproteomics.
  - The Consultant Pharmacist
- **American Association of Pharmaceutical Scientists (AAPS):** served as reviewer for the submitted abstracts to the AAPS annual meetings 2013 - Present.
- **Peer reviewer:** Peer reviewer for Journal of Pharmacology and Experimental Therapeutics, Epigenetics, Clinical Cancer Research, Molecular Cancer Therapeutics, Neoplasia, Pharmaceutical Research and Cancer Chemotherapy & Pharmacology.

Academic Service

- **National and State Level:**
- Chair of the preclinical development track of the Abstract Screening Committee (2018), , American Association of Pharmaceutical Scientists (AAPS).
- Member for the AAPS Task Force: Molecules to Medicine (2017).
- National Institutes of Health (2014): early career reviewer, Center for Scientific Research (CSR).
- Office of Professional Regulation, state of Vermont: consultant for the pharmacology exams provided by the Board of Naturopathic Physicians.
- University of Vermont Cancer Center (2014): Associate member.
- Leukemia & Lymphoma Research Foundation (2012): member of review panel for the clinical research training fellowships.

- **College/University Level:**
  - Member of the Faculty Affairs Committee (2017 – Present).
  - Member of the Academic Affairs Committee (2017 – Present).
  - Member of the Pharmacy Curriculum Committee (2012 – 2016).
  - Member and co-chair of the Graduate Admission Committee (2013 – 2016).
  - Member of the Library Advisory Committee (2015 – 2016).
  - Preceptor for Pharm D students during their advanced pharmacy practice experiential education (Pharmaceutical Research Electives).

Research Support

Current Research Support

Agency: NIH (INBRE-WV)
Title: Mechanisms of DNA methyltransferase inhibitors-induced cellular differentiation
Role: PI 08/01/2017 – 07/31/2019

Completed Research Support

Agency: NIH (INBRE-WV)

Title: Impact of DNA hypomethylating agents on H3K56 and H3K9 acetylation in leukemia cells
Role: PI 08/01/2017 – 07/31/2018

Agency: American Cancer Society Institutional Research Grant. Collaborative Translational Cancer Research Program.
Title: Mechanisms of cellular differentiation and epigenetic changes associated with DNA methyltransferase inhibitors in acute myeloid leukemia.
Role: PI 01/01/2015 – 12/31/2015

Agency: Scholarship of Discovery Intramural Grant Program, Albany College of Pharmacy and Health Sciences
Title: Interactive effects of curcumin and decitabine on DNA methylation in leukemia cells.
Role: PI 06/01/2014 – 05/31/2015

Agency: Scholarship of Discovery Intramural Grant Program, Albany College of Pharmacy and Health Sciences
Title: Investigating the DNA methylation changes associated with curcumin exposure
Role: PI 06/01/2013 – 05/31/2014

Agency: Vermont Cancer Center and Lake Champlain Cancer Research Organization Massive Parallel Sequencing Pilot Project
Title: Genome-wide targets of the MOZ-HAT complex in hematopoietic stem cells. (PI: Karen Glass)
Role: Co-Investigator 01/01/2012 – 12/31/2012

Agency: Faculty Startup Fund, Albany College of Pharmacy and Health Sciences
Role: PI 09/01/2010 – 06/30/2012