

CURRICULUM VITAE OF JOHN K. BUOLAMWINI, PH.D.

EDUCATION:

Undergraduate: Kwame Nkrumah University of Science and Technology, Ghana, B. Pharm, 1981.

Graduate School

University of Alberta, Edmonton, Canada, **Ph.D.**, Pharmaceutical Sciences (Medicinal Chemistry), 1990.

Postdoctoral:

1990-1992: Alberta Cancer Board Fellow, University of Alberta, Canada

1992-1994: NIH Fogarty Visiting Fellow, National Cancer Institute, Bethesda, MD

PHARMACY CERTIFICATION:

Registrant of the Pharmacy Examining Board of Canada (1993)

HONORS/AWARDS:

Undergraduate:

1981 Inter-Associates Prize for Best Overall-Student in the Final B. Pharm. Examinations
1981 Prize for Best Final Year B. Pharm. Student in Pharmaceutical Chemistry
1981 Prize for Best Overall-Student in the Final B. Pharm. Examinations
1981 Prize for Best Student in Pharmacy Management in Final B. Pharm. Examinations

Graduate:

1987 & 1989 Graduate Student Travel Award, University of Alberta,

1985-1990 Ph.D. Studentship, Alberta Heritage Foundation for Medical Research, University of Alberta, Canada

Professional Service/Awards/Honors:

2019 Recipient of the Rosalind Franklin University Morris Parker Faculty Research Achievement Award
2019-2020 Chair, Chemistry Section, American Association of Colleges of Pharmacy (AACP)
2018-2019 Chair-Elect, Chemistry Section, American Association of Colleges of Pharmacy (AACP)
2018-2024 Permanent Member, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section
2013, 2014, 2017, 2018 Outstanding Reviewer, *Journal of Medicinal Chemistry*
2011 Excellence in Teaching Award Nominee, UTHSC
2000-2005 NIH KO1 Research Career Development Award
2004 Co-Chair, Symposium on Experimental Therapeutics, American Association for Cancer Research (AACR) 95th National Meeting, Orland, FL
1998-2000 Legislative Committee of the American Association for Cancer Research (AACR)
1996-1997 American Association of Colleges of Pharmacy (AACP) New Investigator Award.
1992-1994 Fogarty International Fellowship Award, NCI, NIH, Bethesda, MD
1990-1992 Alberta Cancer Board Fellowship Award, University of Alberta
1985-1991 Ph.D. Studentship Award, Alberta Heritage Foundation for Medical Res., University of Alberta

SOCIETY MEMBERSHIPS:

American Association of Colleges of Pharmacy (AACP)
American Association for Cancer Research (AACR)
American Chemical Society (ACS)

UNIVERSITY APPOINTMENTS:

9/94 to 6/00: Assistant Professor of Medicinal Chemistry
Department of Medicinal Chemistry, and
School of Pharmacy, University of Mississippi, Oxford, MS
7/00-8/00: Associate Professor of Medicinal Chemistry
Department of Medicinal Chemistry, and
School of Pharmacy,
University of Mississippi, Oxford, MS
8/00-6/05: Associate Professor of Medicinal Chemistry
Department of Pharmaceutical Sciences

10/04-2008: College of Pharmacy,
University of Tennessee Health Science Center, Memphis, TN
Associate Program Leader of Developmental Therapeutics
University of Tennessee Cancer Institute

07/05-7/14: University of Tennessee Health Science Center, Memphis, TN
Professor of Medicinal Chemistry, Department of Pharmaceutical Sciences, College of
Pharmacy University of Tennessee Health Science Center, Memphis, TN

10/12-7/14: Professor and Vice Chair and Director of Graduate Programs,
Department of Pharmaceutical Sciences, College of Pharmacy, University of Tennessee
Health Science Center, Memphis, TN

08/14-Present: Chair and Professor, Department of Pharmaceutical Sciences, College of Pharmacy,
Rosalind Franklin University of Medicine and Science
North Chicago, IL

TEACHING

THE UNIVERSITY OF MISSISSIPPI SCHOOL OF PHARMACY COURSES (9/1994-7/2000):

Fall Semesters

MEDC 503 Graduate Research Methodology (3 Credit Hours) Lecture/Laboratory

Instructor of Record (Course Director), Teaching and Coordinating.

Prepared notes, overhead-transparencies and handouts as teaching materials requiring an average 3 hours per lecture

Organized and supervised labs.

Worked closely with students, and evaluated their projects on separation and identification of compounds in unknown mixtures

Worked with students on topics for review and class seminar presentation. Assessed reviews and class presentations. Graded students.

Spring Semesters

MEDC 314 (3 Credit Hours) Lecture

"Principles of Medicinal Chemistry"

PharmD Students, 4 lectures involving modern drug design and discovery principles such as structure-activity relationships, quantitative structure-activity relationships, isosterism and bioisosterism, pharmacophore concept, rational drug design, random screening, pro-drugs etc., setting and grading exams.

MEDC 315 (1 Credit Hour) Laboratory

"Principles of Medicinal Chemistry Laboratory"

Pharm students, 2 weeks of lectures, 18 hours on molecular modeling theory and exercises, using SYBYL modeling program.

MEDC 317 (3 Credit Hours) Lecture

"Pharmacogenetics/Pharmacoinmunology"

Pharm students, 2 weeks of lectures, 18 hours on molecular modeling theory and exercises, using SYBYL modeling program.

MEDC 544 and MEDC 644: Graduate Seminars

"Seminar on Current Medicinal Chemistry Topics"

Coordinated schedule of seminars, worked with faculty to choose topics of seminars, assigned topics to students and advised students on topics and seminar presentation, helped students with abstract preparation, graded student presentations.

MEDC 611 (3 hours) graduate computer-aided drug design course

"Quantitative Structure-Activity Relationships (QSAR)

2 weeks helping students perform comparative molecular field analysis (CoMFA) three-dimensional (3-D) QSAR studies on various 3-D molecular databases.

CURRICULUM DEVELOPMENT

New Departmental Courses (MEDC 314, 315 and 317)

New Syllabus for MEDC 503 Course

New Syllabus for MEDC 610 Course

New Cumulative Examinations Structure

THE UNIVERSITY OF TENNESSEE COLLEGE OF PHARMACY COURSES (8/2000-7/2014):

Fall Semesters

<u>Course No.</u>	<u>Course Name (3 Credit)</u>	<u>Contribution to Course</u>
Graduate PHSC 813:	Research Techniques	Prepare and present two weeks of lectures and practical classes on UV theory and experimental applications in medicinal chemistry. Gave a and graded one test.

<u>Course No.</u>	<u>Course Name (3 Credit)</u>	<u>Contribution to Course</u>
Graduate PHSC 824	Computer-aided design of therapeutics	<u>Course Director:</u> Prepared and taught the whole semester course of QSAR, gave a and graded two exams.

Spring Semesters

Pharm.D. Curriculum

<u>Pharm.D. Year</u>	<u>Course No.</u>	<u>Course Name (3 Credit)</u>	<u>Contribution to Course</u>
First Year	PHSC122	Org. Medicinal Chemistry	Prepared lecture notes and teach about 20 hours. Held review sessions. Administered and graded two exams.

Graduate Courses

<u>Course No.</u>	<u>Course Name (3 Credit)</u>	<u>Contribution to Course</u>
PHSC 622	Organic Med. Chem.	Discuss advanced concepts with graduate students and PharmD/Ph.D students.

Excellence in Teaching Award for 2011 Nominee by Student Government Association Executive Council (SGAEC) of the University of Tennessee Health Science Center for teaching in the **PHSC122** Pharm.D. Medicinal Chemistry course.

ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE COLLEGE OF PHARMACY SINCE WINTER QUARTER 2014

Advanced Medicinal Chemistry 2nd Year Pharm.D. course, Winter Quarter

GRADUATE STUDENT DISSERTATION COMMITTEE SERVICE:

Aditya Ganju, Ph.D. Dissertation Committee, Department of Pharmaceutical Sciences 2013-2014
Jin Wang, Ph.D. Dissertation Committee, Department of Pharmaceutical Sciences 2013-2014
Ricahrd Hogland, Ph.D. Dissertation Committee, Department of Pharmaceutical Sciences 2011-2014
Hilaire Playa, Ph.D. Dissertation Committee of Department of Pharmaceutical Sciences 2006-2014 (Major Advisor)
Awarded
Horrick Sharma, Ph.D. Dissertation Committee of Department of Pharmaceutical Sciences 2006-2011 (Major Advisor) Awarded
Shan Sun Dissertation Committee of Department of Pharmaceutical Sciences 2008-2014 (Major Advisor) Awarded
Ravikiran Panakanti, Ph.D. Dissertation Committee of Department of Pharmaceutical Sciences 2006-2010,
Awarded
Jin Xin, MS. Candidate, Department of Pharmaceutical Sciences, University of Tennessee Health Science Center, 2006-2009, Awarded
Surekha Pimple, M.S. Thesis Committee Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2007-2008 (Major Advisor) Awarded
Kris Virga, Ph.D. Candidate, Interdisciplinary Program, University of Tennessee Health Science Center, 2002-2006 (Chairman) Awarded
Michael Mohler, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2003-2005, Awarded
Amol Gupte, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2003-2006 (Major Advisor) Awarded

Zhengxiang Zhu, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2003-2006 (Major Advisor) Awarded
Wenwei Lin, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2003-2006 (Major Advisor) Awarded
Ja'Wanda Grant, Ph.D. Candidate, Interdisciplinary Program, University of Tennessee Health Science Center, 2003-2008 (Major Advisor) Awarded
Kimberly Grimes, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2004-2008 Awarded
Gangadhar Durgam, Ph.D. Candidate, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2003-2005 Awarded
Rajani Kurukonda, Ph.D. Student, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2001-2005 Awarded
Jie Han, Ph.D. Student, Department of Pharmaceutical Sciences, University of Tennessee College of Pharmacy, 2001-2003 Awarded
Haregewein Assefa, Ph.D. Medicinal Chemistry Department (University of Mississippi): 1995-1999. Awarded
James Parker, Ph.D., Chemistry Department (University of Mississippi): (1996-1999).Awarded
Theresa Johnson, Ph.D. Candidate, Medicinal Chemistry (University of Mississippi): (1997- 2000) Awarded
Maria Alvim-Gaston, Ph.D. Candidate, Medicinal Chemistry (University of Mississippi): (1996-2000) Awarded
John Satumba, Ph.D. Candidate; Chemistry Department (University of Mississippi): (1998-2000) Awarded

COMMUNITY SERVICE

1998-1999 Sigma Xi Graduate Poster Judge, University of Mississippi
1997-1999 Regional Science Fair Judge, Region 7, Mississippi
1998-2000 Oxford Elementary School Student Code of Conduct Committee, Oxford, Mississippi
1998-2000 Member of Code of Conduct Committee, Oxford City School District, Oxford, Mississippi
2004 Regional Science Fair Judge, Tennessee
2011 Regional Science Fair Judge, Tennessee
2015 Judges for Phi Delta Epsilon's Inaugural Dr. Rosalind Franklin Pageant supporting Ann and Robert Lurie Children's Hospital.

POSTDOCTORAL FELLOWS AND ASSOCIATES TRAINED:

Name: James K. Addo
Degree: Ph.D.
Date Started: November 1, 2000
Date Ended: November 19, 2002
Present Position: Research Scientist (Bioorganic Chemistry), University of Kansas, Missouri.

Name: Haregewein Assefa
Degree: Ph.D.
Date Started: February 1, 2001
Date Ended: October 18, 2002
She served as Associate Professor of Medicinal Chemistry, Tuoro University, New York, left recently

Name: Shantaram Kamath
Degree: Ph.D.
Date Started: April, 2002 to June 2006
Present Position: Pharmacist

Name: Shivaputra Patil
Degree: Ph.D.
Date Started: August 03, 2003 to 2007
Present Position: Research Assistant Professor, Department of Pharmaceutical Sciences, Rosalind Franklin University of Medicine and Science College of Pharmacy

Name: Chunmei Wang,
Degree: M.D.
Date Started: February 2006 to April 2013
Present Position: Staff Scientist, St. Jude Children's Research Hospital

Name: Hemantkumar Deokar
Degree: Ph.D.
Dates: July 1, 2012 to June, 2016
Present Position: Research Associate, Dept. of Pharmaceutical Sciences, Rosalind Franklin University of Medicine and Science College of Pharmacy (Buolamwini Laboratory)

Name: Kenyuna Cameron
Degree: Ph.D.
Dates: February 1, 2013 to July, 2016
Present Position: Instructor, Southwest Community College, TN

Name: Renukadevi Patil
Degree: Ph.D.
Date Started: February 2014 to January 2015
Present Position: Research Specialist, Department of Microbiology and Immunology, Rosalind Franklin University of Medicine and Science College of Pharmacy

Name: Anna Rogojina
Degree: Ph.D.
Date Started: November 2014 to November 2016

Name: Mythili Yenjerla
Degree: Ph.D.
Dates: November 2016-August 2018

Name: Mithun Rajee
Degree: Ph.D.
Dates: February 1, 2017 - Present

GRADUATE STUDENTS TRAINED:

Joohee Hong a Medicinal Chemistry Masters student (1995-1996), pursued a Ph.D. degree in chemistry at the University of California, Santa Barbara, CA.

Amol Gupte, Ph.D. student (8/2001-10/2006). Ph.D. Dissertation Title: *"Probing the N⁶ Position of the es Nucleoside Transporter Inhibitors"*
Current Position: Managing Director, Regulatory Medical Writing Company, Mumbai, India

Zhenxiang Zhu, Ph.D. student (7/2001-09/2006) Ph.D. Dissertation Title: *Synthesis and Biological Evaluation of Constrained Analogs of NBMPR the Prototype es Nucleoside Transporter Inhibitor.*
Current Position: Research Associate in Drug Discovery, Columbia University, New York

Wenwei Lin, Ph.D. student (9/2001-10/2006) Ph.D. Dissertation Title: *"Design and Synthesis of Inhibitors and Probes for the ei Nucleoside Transporter"*.
Current Position: Senior Scientist, Chemical Biology and Therapeutics Department, St. Jude Children's Research, Hospital, Memphis, TN

Ja'Wanda Grant, Ph.D.; UTHSC Interdisciplinary Program (IP) Student (8/2002-12/2008).
Dissertation Title: *"Structure-Activity Relationship and Mechanistic Studies on the Chemopreventive Activity of Dipyridamole and Its Analogs"*
Current Position: Director of Undergraduate Research, Xavier University, New Orleans, LA

Surekha Pimple, (8/2005-2008) M.Sc.
Worked on Nucleoside transport inhibitor discovery and computer-aided drug design.
Current Position: Scientist at Biocartis, Belgium

Horrick Sharma, Ph.D. student (8/2006-2011), Dissertation Title: *Rational Design and Synthesis of HIV Integrase Inhibitors*.

Current Position: Assistant Professor, Southwest Oklahoma State University College of Pharmacy

Shan Sun, Ph.D. student (8/2008-11/2014) Dissertation Title: *Rational Design and Synthesis of STAT3 Inhibitors*

Current Position: Postdoctoral Associate at Tri-Institutional Therapeutics Discovery Institute, Inc.

Hilaire Playa, Ph.D. Student (8/2009-11/2014) Dissertation Title: *Design and Synthesis of Nucleoside Transporter Inhibitors*.

Current Position: Postdoctoral Fellow, University of Tennessee Health Science Center, Memphis, TN

SUMMER RESEARCH STUDENTS MENTORED AT ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE

Tien Viep, Rosalind Franklin University of Medicine and Science, COP, Summer 2015

Yaa Nyantakyi, Rosalind Franklin University of Medicine and Science, COP, Summer 2016

Afwaj Binhussein, Rosalind Franklin University of Medicine and Science, COP, Summer 2017

Marissa Locke, DePaul University, Chicago IL, Summer 2015

John Manuel, DePaul University, Chicago IL, Summer 2016

Sierra Smith, Lake Forest College, Lake Forest, IL, Summer 2016

Saira Ahmad, DePaul University, Chicago IL, Summer 2017

Sarah Singer, Rosalind Franklin University of Medicine and Science, COP, Summer 2018

Daniela Lefticariu, Rosalind Franklin University of Medicine and Science, COP, Summer 2018

Clarissa Gomez, Arlington Heights High School, IL, Empire Science Award recipient, Summer 2018

Anjini Glover, Adelaide Stevens High School, IL, Summer 2018

Darya Polyaskaya, Rosalind Franklin University of Medicine and Science, COP, Summer 2019

Vanessa Rivera, Rosalind Franklin University of Medicine and Science, COP, Summer 2019

STUDENT RESEARCH ASSISTANTS/INTERNS:

Andrew Rotinger, Rosalind Franklin University of Medicine and Science. COP, student assistant, 2015

Sydni Bellow, Rosalind Franklin University of Medicine and Science. COP, student assistant, 2016

Kristina Karapetyan, Lake Forest College, Lake Forest, IL, student intern, 2016

Sierra Smith, Lake Forest College, Lake Forest, IL, student intern, 2016

Hieu Phan, RFUMS, COP Student Research Assistant, 2018

RFUMS ROTATION STUDENTS

Megan Gaska, Rosalind Franklin University of Medicine and Science. Graduate Student on Rotation (11/2014 – 1/23/2015).

PHARM.D. STUDENT ADVISEES AT RFUMS COP

Berry, Gregory

Binhusein, Afwaj (graduated 2019)

Bunting, Taylor (graduated 2019)

Boda, Sharvil (graduated 2019)

Bogdanowicz, Brian (graduated 2016)

Marinier, Donna (graduated 2016)

Gracia, Jesus (graduated 2017)

Nyantakyi, Yaa (graduated 2017)

Patel, Reema (graduated 2017)

Hakim, Munazza (graduated 2018)

Raimonde, Angelina Rose

Ortiz, Jose

Azubuikwe, Lynda

Patel, Shruti

Ghassan, Ayyad

Emily Shilling

Sushra Mapara

Shivani Gheewala

UNDERGRADUATE RESEARCH ASSISTANTS UNIVERSITY OF TENNESSEE HEALTH SCI. CTR.

Darius Mason (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA100102 (Awarded NIH Minority Supplement).

Rhonda Garner (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA101856.

Marian Ores (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA100102.

Nikita Wilson (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA101856.

Kimberly Walker (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA100102.

Elizabeth Ambe (Minority, African-American), a Pharm. D. student of the University of Tennessee, conducted research on my NIH grant No CA101856.

UNDERGRADUATE RESEARCH ASSISTANTS UNIVERSITY OF MISSISSIPPI

DeShonda Lee a pre-pharmacy student for one year in 1995 (Work Study), completed Pharm.D. program at Xavier University of Louisiana, New Orleans.

Mauriel Clay, undergraduate chemistry major, 1995 (Work Study).

Tara Cameron, a pre-pharmacy student, 1995/96, completed Pharm.D. program at the University of Mississippi.

Wade Walker, University of Mississippi P-3 Pharm.D. student who worked with the applicant in the summer of 1995, is now a pharmacist.

Jennifer Boyd, University of Mississippi P-3 pharmacy student who worked in the summer of 1996, is now a pharmacist. Completed the Pharm. D. program at University of Mississippi.

Musah Ceesay, a pre-pharmacy student, summer of 1996, has completed Pharm. D. program at the University of Mississippi.

Larry Pilcher, a P-3 pharmacy student, 1998/99, has completed the Pharm. D. program at University of Mississippi.

Nia Avant (Minority, African-American), University of Mississippi P-3 Pharm.D. student, 1999/00, who was awarded an American Foundation of Pharmaceutical Education (AFPE) Undergraduate Research Scholarship under my supervision, has completed the Pharm. D. program at University of Mississippi.

Wesley Woodard, a Pharm. D. student of the University of Tennessee conducted research on NIH grant No. CA80730.

PROFESSIONAL PHARMACY (PHARM.D.) STUDENT ADVISING, UNIVERSITY OF MISSISSIPPI

I served as Faculty Adviser to twelve (12), P-3 to P-4 pharmacy students from 1999-2000 while they went through the two year transition at the University of Mississippi, Oxford campus before going to the University of Mississippi Medical Center in Jackson, MS to continue the Pharm.D. Program.

MENTOR FOR FEDERALLY FUNDED RONALD MCNAIR UNDERGRADUATE RESEARCH SCHOLARSHIP PROGRAM

Cornelius Varnado, a chemistry major from Alcorn University, MS (Summer 1997), University of Mississippi

Andrea Barr, a biology major from Buffalo University, NY (Summer 1998), University of Mississippi

Henry McGee, biology major from Toogaloo University, MS (Summer, 1998), University of Mississippi

Edley Destine, chemistry major from Bethel College, TN (Summer 2001), University of Tennessee

London Adams, biology major from Lane College, TN (Summer 2002), University of Tennessee

MENTOR OF NIH SPONSORED SUMMER UNDERGRADUATE RESEARCH INTERNS

PD/PI of NIH NHLBI Short-Term Research Training for Undergraduates (T35M, 5/99-8/04) Award from NIH and served for two years (1999 and 2000) before leaving the University of Mississippi to move to the University of Tennessee. The specific students mentored were:

Alicia Andrews, University of Mississippi student, Summer of 1999

James Eledge, University of Southern Mississippi student, Summer of 1999

MacShelle Stewart, Jackson State University student, Summer of 2000

Kimberly Powell, Alcorn State University student, Summer of 2000

Kwanza Carter, University of Mississippi student, Summer of 2000

MENTOR IN THE UNIV. OF TENNESSEE COLLEGE OF PHARMACY NIH MINORITY CENTER OF EXCELLENCE GRANT

Deryk Cooper, Summer Student in College of Pharmacy Minority Center of Excellence Program (2004)
Verneka Murphy, Summer Student in College of Pharmacy Minority Center of Excellence Program (2005).
Jessica Nguyen, Summer Student in College of Pharmacy Minority Center of Excellence Program (2006).

MENTOR IN THE SUMMER UNDERGRADUATE RESEARCH INTERNS AT THE UNIVERSITY OF TENNESSEE

NIH-sponsored summer biomedical research internship program directed by Dr. Edward Schneider, Department of Physiology.

Student mentored: Misty Roberts, a Sophomore from Tennessee Technology University, in the Summer of 2001.

HIGH SCHOOL STUDENT MENTORING AT THE UNIVERSITY OF MISSISSIPPI

Participated in mentoring NIH-funded Biomedical Research Internship high school students while at the University of Mississippi; these were:

Thomas Taylor, Summer of 1995
Kelvin Wellingham, Summer of 1996
Tambernessia Willis, Summer of 1998

EDITORIAL APPOINTMENTS:

Founding Editor-in-Chief of *Current Cancer Drug Targets* (2001 to 2013)
Editorial Board Member of *Current Medicinal Chemistry* (1997 to Present)
Editorial Board Member of *Current Molecular Pharmacology* (2008 to Present)
Editorial Board Member of *Drug Discoveries and Therapeutics* (2010 to Present)
Executive Guest Editor *Current Pharmaceutical Design* Issue on "Novel Molecular Targets for Anticancer Drug Discovery" (February 2000)

PEER REVIEWER OF MANUSCRIPTS FOR THE FOLLOWING JOURNALS:

Journal of Medicinal Chemistry
Journal of Chemical Information and Modeling
Expert Opinion in Therapeutic Patents
Expert Opinion in Investigational Drugs
Bioorganic and Medicinal Chemistry
Bioorganic and Medicinal Chemistry Letters
Tetrahedron Letters
Journal of the National Cancer Institute
Molecular Cancer Therapeutics
European Journal of Medicinal Chemistry
Nature Reviews Cancer
Journal of Computer-Aided Molecular Design
Cancer Research
Clinical Cancer Research
Cancer Detection and Prevention
Molecular Pharmacology
Journal of Natural Products
Journal of Pharmacy and Pharmaceutical Sciences
Journal of Biomolecular Screening
FEBS Letters
Pharmacology Biochemistry and Behavior
Journal of Taibah University for Science
Journal of Cheminformatics
Oncotarget
Pharmacological Research

INSTITUTIONAL COMMITTEES AND OFFICES

2017- RFUMS, Microbiology and Immunology Department Chair Search Committee
2014- Executive Committee, College of Pharmacy Rosalind Franklin University of Medicine and Science
2014- Research Committee, Rosalind Franklin University of Medicine and Science (RFUMS)
2015 College of Pharmacy RFUMS, Students Appeals Committee

2012-2014 Chair, Faculty Search Committee, Pharmaceutical Sciences Dept, UTHSC
 2012-2014 Graduate Council, University of Tennessee Health Science Center
 2014 Preventive Medicine Department Chair Search Committee
 2009-2013 Honors and Awards Committee, University of Tennessee College of Pharmacy
 2012-2013 Professionalism Committee, University of Tennessee College of Pharmacy
 2010-2014 Chair, Departmental Tenure & Promotion Committee, UTHSC College of Pharmacy
 2009-2011 Administrative Planning Council, University of Tennessee College of Pharmacy
 2000-2009 University of Tennessee Health Science Center Institutional Review Board (IRB),
 2006-2008 Strategic Planning Committee, University of Tennessee Health Science Center
 2000-2006 Intercultural Committee, University of Tennessee Health Sciences
 2004-2009 Research Committee, University of Tennessee College of Pharmacy
 2003-2005 Tenure & Promotion Committee, University of Tennessee College of Pharmacy
 2002-2003 Financial Resources Committee, University of Tennessee College of Pharmacy
 1998-2000 Chancellor's Task Force on Academic Computing, University of Mississippi
 1996-1997 Library Council, University of Mississippi
 1998-2000 Coordinator, Year 2000 (Y2K) Computer Compliance for Dept. of Med. Chem.
 1996-2000 Computer Committee, School of Pharmacy, University of Mississippi,
 1999-2000 Science Library Self-Study Committee, University of Mississippi,
 1998-2000 Animal Welfare Committee, School of Pharmacy, University of Mississippi
 1998-2000 Greenhouse and Garden Committee, School of Pharmacy, University of Mississippi
 1998-2000 Scholastic Standards Committee, School of Pharmacy, University of Mississippi

PEER-REVIEWED NIH EXTRAMURAL GRANT FUNDING

ACTIVE RESEARCH SUPPORT

RF1AG047237 (Multi-year funded RO1) (NIH/NIA) (Buolamwini and Stutzmann, PIs) 8/2016-3/2021

"Novel Drug Discovery for AD Targeting Ryanodine Calcium Channels"

The goal of this project is to synthesize novel compounds and perform lead optimization of selective RyR2 intracellular calcium channel modulators towards the development of new therapeutics for Alzheimer's disease.

Role: MPI

R41 AG055224 (NIA/NIH) (Buolamwini and Stutzmann, PIs) 05/2018-04/2021

Optimization of Novel Ryanodine Receptor Modulatory Compounds for Alzheimer's Disease

The goal of this project is to apply medicinal chemistry, *in vitro* and *in vivo* biological testing to improve the potency and drug-likeness as well as brain penetrability of novel modulators of the RyR2 ER membrane calcium channel as potential therapeutics for Alzheimer's disease.

Role: MPI

1 I01 BX002771 (Veterans Administration) (Gazmuri, PI) 10/2017 - 9/2021

Cyclophilin-D: A Regulator of Mitochondrial Oxidative Phosphorylation

The major goals of this project are to conduct target identification and develop small molecule inhibitors of Cyclophilin D and its mitochondrial interaction partners.

Role: Co-Investigator

1R01CA186662 (NCI/NIH) (PI: Zhang) 4/2014-2/2020

"Novel Small Molecule MDM2 Inhibitors for Pancreatic Cancer Therapy"

The goal of this project is to use an integrated approach involving the synthesis and *in vitro* and *in vivo* studies to develop novel compounds for pancreatic cancer therapy.

Role: Co-Investigator (PI of Rosalind Franklin University Subaward)

SUBMITTED:

1R01GM134540-01A1 (NIGMS/NIH) (PI: Buolamwini) 7/2020-3/2024

"Discovery and Characterization of Sodium-Dependent Nucleoside transporter Inhibitors"

The goal of this project is to apply medicinal chemistry, *in vitro* and *in vivo* biological testing to improve the potency, selectivity and drug-likeness of novel human sodium-dependent concentrative nucleoside transporters .

Role: PI

Status: Resubmission of the 01 application that received 31 percentile, under review.

1R01CA254343-01 (NCI/NIH) (PIs: Buolamwini, Pfeffer, Turkson) 7/2020-3/2025

“Lead Optimization of Novel STAT3 SH2 Domain Inhibitors to Treat Glioblastoma”

The goal of this project is to apply medicinal chemistry, *in vitro* and *in vivo* biological testing to improve the potency, selectivity and drug-likeness as well as brain penetrability of novel STAT3 SH2 Domain Inhibitors.

Role: Contact PI

Status: First submission under review

COMPLETED:

Alzheimer’s Drug Discovery Foundation (Buolamwini and Stutzmann, PIs) 03/2016-04/2019

“Drug development and optimization of compounds stabilizing ryanodine calcium channels for AD”

The goal of this project is structure-activity and ADME optimization and animal studies for preclinical studies of RyR2 calcium channel modulators.

Role: Co-Principal Investigator

Alzheimer’s Association Grant # 364506 (Stutzmann and Buolamwini, PIs) 10/2015-9/2018

Intracellular Ca²⁺ channels as a therapeutic target for AD drug discovery

The goal of this project is to develop novel RyR2 calcium channel modulators for development as therapeutics for treating Alzheimer’s disease.

Role: Co-Principal Investigator

R01 GM104503-01A1 (NIGMS/NIH) (PI: Buolamwini) 5/2012-2/2016

A Targeted Preemptive Approach to Addressing Mitochondrial Toxicity of Nucleoside

The goal of this project is to use an integrated approach involving the synthesis and use of novel prodrugs for combination therapy with nucleoside drugs to reduce or prevent toxicity to mitochondria.

Role: Principal Investigator

R21 AI084710-01 (NIH/NIAID) (PI: Buolamwini) 9/2009-8//2012

Discovery and Optimization of Novel Integrase Inhibitors as Anti-HIV Agents

The goal of this project is to conduct the synthesis and structure-activity relationship (SAR), QSAR and molecular modeling studies to optimize salicylic acid chalcone integrase inhibitors as novel anti-HIV agents.

Role: Principal Investigator

R01 CA112519-01 (NIH/NCI) (PI: Ali-Osman) 2/1/2006-1/31/2011

Novel Targeted Therapeutics for CNS Malignancies

The long-term objective of this project includes structure-based design, molecular modeling and organic synthesis and lead optimization of novel compounds as GST-pi enzyme-targeted anti-glioma therapeutics.

Role: Co-PI (PI for UT Subcontract for structure-based design, molecular modeling and chemical synthesis)

R21 HL095002 (NIH/NHLBI) (PI: Buolamwini) 8/01/09-7/31/2012

Inhibitors of the ENT4 Adenosine Transporter for Cardioprotection

The goal of this project is to synthesize novel ENT4 transporter transport inhibitors through computer-aided drug design.

Role: Principal Investigator

R03 AI077478 (NIAID/NIH) (PI: Buolamwini) 2/22/08-1/31/2010

Carcinogenicity Testing of Novel Phenanthrene Diketoacid Anti-HIV Agents

This project is to undertake synthesis and SAR studies and test a new approach to reducing carcinogenicity of phenanthrene diketoacids.

Role: Principal Investigator

P50CA108786-02 (NIH/NCI SPORE) (PI: Ali-Osman) 9/1/2004-8/31/2009

Development of GSTP1-Targeted Anti-Glioma Therapeutics

The long-term objective of this project is to optimize and develop lead candidates with high *in vitro* and *in vivo* antiglioma activity for human clinical trials.

Role: Co-Investigator (PI for UTHSC-Subcontract modeling and organic synthesis)

PO1 AI057836 (NIH/NIAID) (PI: McNeil) 05/01/04-04/30/2009
MDR-TB Drugs: Targeting Cell Wall Synthetic Enzymes
The major goals of this program project are to develop new drugs to treat MDR M. tuberculosis active against cell wall biosynthesis. The project includes structure-based design, medicinal chemistry, testing against essential enzymes, testing against M. tuberculosis bacteria, and testing in mice.
Role: Co-Leader Project 1 (Lee: Project 1 Leader): Structure-based design and QSAR.

R03 CA125850 (NIH/NCI) (PI: Buolamwini) 7/1/2007-6/30/2009
Development of Novel Chemopreventive Agents
The goal of this project is to conduct structure-activity relationship (SAR) studies for the discovery of novel chemopreventive agents
Role: Principal Investigator

R03 CA105327 (NIH/NCI) (PI: Buolamwini) 9/22/2004-8/31/2007
Nucleoside Transport Inhibitors For Cancer Prevention
The goals of this project are to probe the changes in nucleoside transporter gene expression during carcinogenesis progression, to determine whether nucleoside transport inhibitors can inhibit carcinogenesis.
Role: Principal Investigator

R21 AI-065372-02 (NIH/NIAID) (PI: Buolamwini) 4/15/2005-3/31/2007
Nucleoside Transporters in HAART Mitochondrial Toxicity
The goal of this project is to develop a novel nucleoside transport inhibitory approach to preventing mitochondrial toxicity of HAART chemotherapy in HIV/AIDS patients.
Role: Principal Investigator

KO1 HL67479-05 (NHLBI/NIH) (PI: Buolamwini) 9/1/2000-8/31/2006
NBMPR-Binding Site of the Human es Adenosine Transporter.
The long-term objective of this project is to synthesize a novel bifunctional photoaffinity probe and use it to determine amino acids involved in NBMPR binding at the human es/ENT1 adenosine transporter.
Role: PI

R15 CA-100102-01 (NIH/NCI) (PI: Buolamwini) 6/1/2003-5/31/2006
Novel Agents Targeted To p53-Mdm2 Pathways
The goals of this project are to synthesize and investigate the mechanism of anticancer activity of a new series of p53 pathway active compounds discovered through structure-based drug design, exert their effects on p53 and p21 levels by inhibiting p53-Mdm2 interaction, and conduct structure-activity relationship (SAR) studies.
Role: PI

Total Direct Costs: \$100,000.00

R15 CA-101856-01 (NIH/NCI) (PI: Buolamwini) 7/1/2003-6/31/2006
Nucleoside Transporters as Chemoprevention Targets
The goal of this project is to synthesize new compounds and use them to investigate nucleoside transporters as chemoprevention targets.
Role: PI

RO1 CA79644 (NIH/NCI) (PI: Ali-Osman) 2/01/1999-1/31/2004
Glutathione S-Transferase pi Polymorphisms and Drug Resistance
The long-term objective of this subproject is to use molecular modeling and biological studies to understand the mechanisms of interaction of GST-pi variants with substrates and to design new inhibitors of the variant enzymes.
Role: Co-PI

R15 CA080730 (NIH/NCI) (PI: Buolamwini) 4/1/1999-3/31/2002
Antisense Modulation of Nucleoside Transport
The goal of this project is to investigate nucleoside transporters as chemoprevention targets.

American Heart Association Grant-in-Aid (PI: Buolamwini) 7/1/1999-6/30/2001
9950872V

Design and Discovery of Adenosine Uptake Blockers as Potential Agents for the Treatment of Ischemia and Reperfusion Injury

The goals of this project are synthesize and test novel nucleoside transporter inhibitors

American Heart Association Grant-in-Aid

(PI: Buolamwini)

7/1/1995-6/30/1997

Design and Discovery of Adenosine Uptake Inhibitors as Potential Cardioprotective Agents for Ischemia and Reperfusion Injury

INVITED LECTURES/SEMINARS:

Department of Pharmaceutical Sciences, College of Pharmacy University of Arkansas for Medical Sciences, Little Rock, AR

"Design and Discovery of Small Molecule Drug/Probe Leads Against Targets in Heart Disease, Cancer and AIDS", September 6, 2019

Department of Pharmacological and Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX

"Design and Discovery of Novel Agents for Cancer, Cardiovascular and Viral diseases" December 16, 2018

Graduate Program Seminar Series: Drug Discovery & Development

University of Arizona, College of Pharmacy, Tucson, AZ

"Design and Discovery of Probes and/or Potential Therapeutic Lead Compounds for Cancer, Ischemia-Reperfusion Injury, HIV/AIDS, or Mitochondrial Protection" October 23, 2018

Department of Biochemistry and Molecular Genetics, Feinberg School of Medicine, Northwestern University, Chicago, IL. *"Design and Discovery of Potential Therapeutic Agents and/or Probes for Cancer, HIV/AIDS, Ischemia and Mitochondrial Protection"*, April 26, 2018

Department of Medicinal Chemistry, College of Pharmacy, University of Michigan, Ann Arbor, MI. *"Design and Discovery of Potential Therapeutic Leads Targeted to Cancer, Heart and Viral Diseases"*, April 6, 2017

Department of Pharmaceutical Sciences, College of Pharmacy, Southern Illinois University at Edwardsville, Edwardsville, IL. *"Design and Discovery of Potential Therapeutic Agents and Probes for Heart Disease, Cancer, Viral Diseases, and Alzheimer's Disease"*, November 4, 2016

Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, College of Pharmacy, Chicago, IL. *"Discovery of Novel Agents for Against Heart Disease, Cancer or HIV/AIDS"* January 15, 2016.

Department of Chemistry and Biochemistry, Northern Illinois University, DeKalb, IL.

"Design and Discovery of Novel Agents for Cardiovascular, Cancer and Viral diseases" September 25, 2015

Department of Pharmaceutical Sciences, Concordia University of Wisconsin School of Pharmacy, Mequon, WI

"Drug/Probe Design and Discovery for Heart Disease, HIV/AIDS and Cancer " August 27, 2014

Department of Microbiology and Immunology, Rosalind Franklin University of Medicine and Science, North Chicago, IL.

"Design and Discovery of Agents for Use in Cancer and Viral Diseases" June 16, 2015

College of Pharmacy, Rosalind Franklin University of Medicine and, North Chicago, IL.

"Drug/Probe and Biomarker Discovery Targeting Cancer and Cardiovascular Disease" April, 2014.

School of Pharmacy, Auburn University, Auburn, AL

"Drug, Probe and/or Biomarker Discovery Targeting Cancer, HIV/AIDS and Cardiovascular Diseases" November 11, 2013

Cancer Research Center, University of Tennessee Health Science Center, Memphis, TN

"Discovery of Small Molecule Anti-Cancer and Chemoprevention Agents"

October 9, 2013

College of Pharmacy and Pharmaceutical Sciences, Florida A & M University, Tallahassee, FL
"Drug Design and Discovery", June 27, 2012

College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Canada
"A Discovery Expedition Driven by Rational Drug Design", June 9, 2011

Department of Pharmacology and Pharmaceutical Sciences, University of Southern California, Los Angeles, CA
"Design and Discovery of Small Molecule Antitumor or Chemoprevention Agents". November 10, 2010

Department of Molecular Pharmacology, City of Hope Comprehensive Cancer Center, Duarte, CA
"Discovery of Small Molecule Anticancer and Chemoprevention Agents". November 9, 2010

Nelson Institute of Environmental Sciences, New York University School of Medicine, Tuxedo, NY. "Nucleoside Transporters as Therapeutic Targets: Inhibitors and Probes". September 29, 2005

World Pharmaceutical Congress, Cheminformatics Track, Cambridge Healthtech Institute, Philadelphia, PA.
"QSAR in Lead Development" May 24-25, 2005

Department of Pharmacology and Toxicology, University of Alabama at Birmingham (UAB), Birmingham, AL.
"Computer-Aided Drug Design": (Invited Visiting Lecturer); January 17, 2003, January 18, 2005 and June 19, 2007

Department of Pharmacology, University of North Carolina-Chapel Hill, Chapel Hill, NC. "Nucleoside Transporters as Therapeutic Targets: Inhibitors and Probes". September 28, 2004.

Eli Lilly Pharmaceutical Company, Computational Chemistry Department, Indianapolis, Indiana "QSAR and Docking Approaches to Exploring Drug Binding Modes and Receptor Selectivity". June 25, 2004.

Department of Biochemistry, Mehary Medical College, Nashville, TN. "Application of Computer-Aided Molecular Design to Cancer Drug Discovery: p53-MDM2 Interaction, GSTPI, and Receptor Tyrosine Kinase Inhibitors". December 15, 2003

Department of Chemistry, Tennessee Technical University, Cookeville, TN, *Approaches to the Design and Discovery of Novel Agents Against Molecular Targets in Heart Disease, Stroke, Cancer and AIDS*. February 20, 2001

Department of Pharmaceutical Sciences, College of Pharmacy, University of Tennessee Health Science Center, Memphis, TN, *Approaches to the Design and Discovery of Novel Agents Against Molecular Targets in Heart Disease, Stroke, Cancer and AIDS*. May 8, 2000

Delta State University, Cleveland, MS, Mississippi Alliance for Minority Participation Guest Speaker, November 15, 1999

Department of Pharmacology and Toxicology, University of Alabama at Birmingham, Birmingham, AL. "Molecular Modeling Approaches to the Design and Discovery of Inhibitors of Nucleoside Transporters or Glutathione S-Transferase Pi Polymorphic Enzymes". June 2, 1999.

Department of Chemistry, University of Arkansas at Pine Bluff, Arkansas. "Computer-Aided Ligand Design and Molecular Biology Approaches to the Discovery of Novel Agents for the Treatment of Heart Disease, Stroke and Cancer". March 4, 1999.

Division of Basic Pharmaceutical Sciences, College of Pharmacy and Pharmaceutical Sciences, Florida A. & M. University, Tallahassee, Florida. "Computer-Aided Ligand Design and Molecular Biology Approaches to the Discovery of Novel Agents for the Treatment of Heart Disease, Stroke and Cancer and AIDS". July 16, 1998.

Department of Pharmaceutical Chemistry, College of Pharmacy, Rutgers University, Piscataway, NJ, *Application of Computer-Aided Ligand Design and Molecular Biology Approaches to the Discovery of Novel Agents for the Treatment of Heart Disease, Stroke and Cancer* June 25, 1998.

Department of Medicinal Chemistry, School of Pharmacy, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA. "Application of Computer-Aided Ligand Design and Molecular Biology Approaches to the Discovery of Novel Agents for the Treatment of Heart Disease, Stroke and Cancer". February 18, 1998

Department of Chemistry, University of Memphis, Memphis, TN. "Computer-Aided Design and Discovery of Nucleoside Transport Inhibitors". October 20, 1995

Department of Medicinal Chemistry, University of Mississippi, Oxford, U.S.A. "An Integrated Approach to the Discovery of Molecular Targets and Agents for the Therapy of Cancer and AIDS". March 4, 1994

Department of Physiology, University of Alberta, Edmonton, Canada. "Structure-Function Relationships of SAENTA-fluorescein Conjugates: Molecular Modeling Studies" February 8, 1994

Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Canada. "An Integrated Approach to the Discovery of New Molecular Targets And Agents For The Therapy of Cancer and AIDS" February 15, 1994

Departments of Chemistry and Biochemistry, University of Saskatchewan, Saskatoon, Canada. "Molecular Modeling Studies of Structure-Property Relationships of SAENTA-fluorescein Conjugates:" February 22, 1994 (Invited Speaker)

Department of Pharmacology, University of Alberta, Edmonton, Canada "Structure-Function Relationships of SAENTA-fluorescein Conjugates: Molecular Studies" February 28, 1994

EXTRAMURAL GRANT REVIEW ACTIVITIES:

2020	Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, February
2019	Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, June
2019	Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, February
2018	Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, October
2018	Reviewer, NIH ZAI1-AWA-M-C1 and ZAI1-AWA-M-C2, In Vitro Assessments of Antimicrobial Activity SEP Contract Study Sections, May 2018
2018	Reviewer, NIH, ZRG1 BST-F 55 Study Section, March, 2018
2017	Ad Hoc Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, October, 2017
2017	Reviewer, AACP New Investigator Awards (NIA) <u>Biological Sciences</u> Section, August, 2017
2017	ZCA1 RPRB-O (M2) P NCI Special Emphasis Panel, March 2017
2017	Ad Hoc Reviewer, NIH Drug Discovery and Molecular Pharmacology (DMP) Study Section, February, 2017
2017	Reviewer, NIH, ZRG1 BST-F 55 Study Section January, 2017
2016	Reviewer, NIH, ZRG1 AARR-K(53) and K(54), U.S.-Russia Bilateral Collaborative Research Partnerships Grants, December, 2016
2016	Reviewer, AACP New Investigator Awards (NIA) <u>Biological Sciences</u> Section, August, 2016
2016	Reviewer, AACP New Investigator Awards (NIA) <u>Chemistry</u> Section, August 2016
2016	Reviewer, NIH NCI, Special Emphasis Study Section, June, 2016
2016	Reviewer, NIH NCI, Special Emphasis Study Section, February, 2016
2015	Reviewer, NIH NCI, ZCA1 RPRB-O (J1) S Study Section, October
2014	Reviewer, NIH, ZRG1 BST-F 55 Study Section February, June and October rounds
2014	Reviewer, NIH, ZRG1 BCMB-A (51) R Transformative Research Awards, February
2014	Reviewer, NIH, CSR ZRG1 BST-F 55 Study Section, March and June rounds
2014	Reviewer, Department of Defense (DOD) Congressionally Directed Medical Research Breast Cancer Experimental Therapeutics, Training, March
2013	Reviewer, NIH, CSR ZRG1 BST-F 55 Study Section March, June, and October
2013	Reviewer, NIH, CSR ZRG1 BST-F 55 Probe Development/HTS Study Sections, March & June
2012	Reviewer, NIH, CSR ZRG1 BST-F 50 Probe Development/HTS Study Sections, June & October
2011- 2012	Reviewer, National Heart Lung and Blood Institute, Program Project (PO1) Study Section
2011-2012	Scientist Reviewer, DOD Breast Cancer Research Program Experimental Therapeutics Training Grant Awards

2011	Ad Hoc Reviewer, NIH Hepatobiliary Pathobiology (HBPP) Study Section
2010	Chairperson, NIH NIAID, ZAI1 LG-M (C2) Study Section In Vitro Assessments for Antimicrobial Activity – <i>Viruses</i> ,
2009-2011	Chairperson, ZRG1 AARR-E NIAID, AIDS Discovery SBIR/STTR Study Sections
2005-2011	Reviewer, NCI, Drug Discovery and Development Program Project (PO1) Study Sections
2008-2010	Scientist Reviewer, DOD Breast Cancer Research Program; Idea and Impact Awards
2007-2008	NCI Cancer Drug Development and Therapeutics SBIR/STTR, ZRG1 ONC-V Study Section.
2007	Reviewer, Translational Research Review Panel, Ontario Cancer Institute, Canada
2005	Abstract Reviewer as Program Committee Member, American Association for Cancer Research (AACR) 96 th Annual National Meeting
2003-2008	Member, ZRG1 AARR-E (16): NIAID, NIH AIDS Drug Discovery SBIR/STTR Study Section
2002-2006	External Grant Reviewer, Florida A & M University NIH MBRS & RCMI Grants Programs
2002	Reviewer, National Science Foundation (NSF, Chemistry Section)
1996 & 2002	Grant Reviewer, American Chemical Society Research Fund

PEER-REVIEWED JOURNAL PUBLICATIONS AND BOOK CHAPTERS

- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 7-Aryloxysulfonyl Piperidines. *Drug Design and Delivery* 3, 35-47 (1988).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 4-Pyridyl and -Dihydropyridyl analogues of Meperidine and Ketobemidone. *Drug Design and Delivery* 7, 19-31 (1990).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 3-Methyl Derivatives of 4-(Pyridyl) Isosteres of Meperidine. *Drug Design and Discovery* 8, 145-156 (1991).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 1-[2-(pyridyl)ethyl] and 1-[2-(dihydropyridyl)ethyl] Analogues of Fentanyl. *Drug Design Discovery* 8, 307-312 (1992).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Analgesic Activity of 3-Methyl Derivatives of 4-(Pyridyl) Isosteres of Ketobemidone. *Eur. J. Med. Chem.* 27, 81-86 (1992).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 3-Methyl Derivatives of 4-(Pyridyl) Isosteres of Meperidine. *Drug Design Discovery* 8, 245-256 (1992).
- Buolamwini, J. K.** and Knaus, E. E. Synthesis and Antinociceptive Activity of 1-Methylpiperidylidene-2-(pyridine)sulfonamides and some Dihydropyridine Derivatives. *Eur. J. Med. Chem.* 28, 447-453 (1993).
- Jamieson, G.P., Brocklebank, A. M., Snook, M. B., Sawyer, W. H., **Buolamwini, J. K.**, Paterson, A.R.P. and Wiley, J. S. Flow Cytometric Quantitation of Equilibrative, Inhibitor-Sensitive Nucleoside Transporter Sites on Human Leukemic Cells. *Cytometry* 14, 32-38 (1993).
- Buolamwini, J. K.**, Wiley, J. S., Robins, M. J., Craik, J. D., Cass, C. E., Gati, W. P.; and Paterson, A. R. P. Conjugates of fluorescein and SAENTA (5'-S-(2-aminoethyl)-N⁶-(4-nitrobenzyl)-5'-thioadenosine): Flow Cytometry Probes for the es Transporter Elements of the Plasma Membrane. *Nucleosides and Nucleotides* 13 (R. K. Robins Memorial Issue), 737-751 (1994).
- Weinstein, J. N., Myers, T., **Buolamwini, J. K.**, Raghavan, K., van Osdol, W., Licht, J., Viswanadan, V. N. Kohn, K. W., Rubinstein, L. V., Koutsoukos, A. D., Monks, A. P., Scudiero, D. A., Anderson, N. L., Zaharevitz, D., Chabner, B. A., Grever, M. R. and Paull, K. D. Predictive Statistics and Artificial Intelligence in the U.S. National Cancer Institute's Drug Discovery Program for Cancer and AIDS. *Stem Cells* 12, 13-22 (1994).
- Weinstein, J. N., Myers, T., Casciari, J. J., **Buolamwini, J. K.** and Raghavan, K. Neural Networks in the Biomedical Sciences: A Survey of 386 Publications since the Beginning of 1994. *World Congress on Neural Networks* 2, 121-126 (1994).
- Raghavan, K., **Buolamwini, J. K.**, Pommier, Y., Kohn, K.W. and Weinstein, J. N. Three Dimensional QSAR of HIV Integrase Inhibitors: A Comparative Molecular Field Analysis (CoMFA) Study. *J. Med. Chem.* 38, 890-897 (1995).
- Buolamwini***, **J. K.**, Raghavan, K., Pommier, Y., Kohn, K.W. and Weinstein, J. N. Application of the Electrotopological State Index to QSAR Analysis of Flavone Derivatives as HIV-1 Integrase Inhibitors. *Pharm. Res.* 13, 1891-1894 (1996).
- Weinstein, J. N., Myers, T., O'Connor, P. M., Friend, S. H., Fornace, A. J., Kohn, K. W., Fojo, T., Bates, S. E., Rubinstein, L. V., Anderson, N. L., **Buolamwini, J. K.**, van Osdol, W. W., Monks, A. P., Scudiero, D. A., Sausville, E. A., Zaharevitz, D. W., Bunow, B., Johnson, G. S., Wittes, R. E. and Paull, K. D. An Information-Intensive Approach to the Molecular Pharmacology of Cancer. *Science* 275, 343-349 (1997).
- Ali-Osman, F., Akande, O., Xi-Mao, J. and **Buolamwini, J. K.** Molecular Cloning, Characterization and Expression in *Escherichia coli* of Full-Length cDNAs of Three Human Glutathione S-Transferase-pi Gene Variants: Evidence for Differential Catalytic Activity of the Encoded Proteins. *J. Biol. Chem.* 272, 10004-10012 (1997).

16. **Buolamwini*, J. K.** and Joseph J. Barchi, Jr. Solution NMR Conformational Analysis of the Potent Equilibrative Sensitive (es) Nucleoside Transporter Inhibitor, S⁶-(4-Nitrobenzyl)mercaptapurine Riboside (NBMPR). *Nucleosides and Nucleotides*, 16, 2101-2110 (1997).
17. Myers, T. G., Anderson, N. L., Waltham, M., Li, G., **Buolamwini, J. K.**, Scudiero, D. A., Rubinstein, L. V., Paull, K. D., Sausville, E. A., and Weinstein, J. N. A Protein Expression Database for the Molecular Pharmacology of Cancer. *Electrophoresis*, 18, 647-653 (1997).
18. Kombian, S. B., Saleh, T. M., Fiagbe, N. I. Y., Chen, X., Akabutu, J. J., **Buolamwini, J. K.** and Pittman, Q. J. Ibogaine and a Total Alkaloidal Extract of *Voacanga africana* Modulate Neuronal Excitability and Synaptic Transmission in the Rat Parabrachial Nucleus *In Vitro*. *Brain Res. Bullet.* 44, 603-610 (1997).
19. Zjawiony, J. K., Khalil, A. A., Clark, A. M., Hufford, C. D. and **Buolamwini, J. K.** Studies on Methylation in 7H-Naphtho[1,2,3 - i,j][2,7]naphthyridine-7-one System. *J. Heterocycl. Chem.* 34, 1233-1237 (1997).
20. **Buolamwini, J. K.** Nucleoside Transport Inhibitors: Structure-Activity Relationships and Potential Therapeutic Applications. *Curr. Med. Chem.* 4, 35-66 (1997).
21. **Buolamwini, J. K.** Novel Anticancer Drug Discovery. *Curr. Opin. Chem. Biol.* 3, 500- 509 (1999)
22. Raghavan, K., Parish, D., Khan, M. and **Buolamwini*, J. K.** Building a Hypothesis for Nucleoside Transport Inhibitors. In *Rational Drug Design* (Parrill, A. L. and Reddy, M. R., eds.), American Chemical Society, Washington, D.C., pp.153-164 (1999).
23. **Buolamwini, J. K.** and Ali-Osman, F. Dynamic Docking Study of 1-Chloro-2,4-dinitrobenzene (CDNB) Binding at the Putative H-Site of Human Glutathione-S-transferase Pi (GST-p) Polymorphic Proteins. In *Biologically Active Natural Products: Pharmaceuticals* (Cutler, H. and Cutler, S. J., eds.), CRC Press, Boca Raton, FL, pp. 197-207 (2000)
24. **Buolamwini, J. K.** Cell Cycle Molecular Targets in Novel Anticancer Drug Discovery. *Curr. Pharm. Design* 6, 379-392 (2000).
25. Weinstein, J. N. and **Buolamwini, J. K.** Molecular Targets in Cancer Drug Discovery: Cell-Based Profiling *Curr. Pharm. Design*, 6, 354-378 (2000).
26. Wang, H., Prasad, G., **Buolamwini, J. K.** and Zhang, R. Antisense Anticancer Oligonucleotide Therapeutics *Curr. Cancer Drug Targets* 1, 177-196 (2001)
27. Bedir, E., Calis, I., Dunbar, C., Sharan, R., **Buolamwini, J. K.** and Khan, I. A. Two Novel Cycloartane-Type Triterpene Glycosides from the Roots of *Astragalus prusianus*. *Tetrahedron* 57, 5961-5966 (2001)
28. **Buolamwini, J. K.** Cell Cycle Molecular Targets and Drug Discovery In *Cell Cycle Checkpoints and Cancer*, Editor: Blagosklonny M. V., Landes Bioscience, pp. 235-246 (2001)
29. **Buolamwini*, J. K.** and Assefa, H. CoMFA and CoMSIA 3D QSAR and Docking Studies on Conformationally-Restrained Cinnamoyl HIV-1 Integrase Inhibitors: Exploration of a Binding Mode at the Active Site. *J. Med. Chem.* 45, 841-852 (2002).
30. **Buolamwini, J. K.** Novel Molecular Targets for Cancer Drug Discovery In *The Molecular Basis of Human Cancer* (Coleman W. B. and Tsongalis, G. J., eds.), Humana Press, Totowa, NJ, pp. 521-540, (2002)
31. **Buolamwini, J. K.** and Assefa, H. Overview of Novel Anticancer Drug Targets. In *Novel anticancer Drug Protocols*, (Buolamwini, J.K. and Adjei, A.A., eds.), Humana Press, Totowa, NJ, pp. 3-28 (2003).
32. **Buolamwini, J. K.** A Survey of Novel Anticancer Molecular Targets. In *Strategies for the Discovery and Clinical Testing of Novel Anticancer Drugs* (**Buolamwini, J.K.** and Adjei, A.A., eds.), Humana Press, Totowa, NJ, pp. 3-28 (2003)
33. Zhu, Z., Furr, J. and **Buolamwini*, J. K.** Synthesis and Flow Cytometric Evaluation of Novel 1,2,3,4-Tetrahydroisoquine Conformationally Constrained Analogues of Nitrobenzylmercaptapurine Riboside (NBMPR) Designed for Probing Its Bioactive Conformation When Bound to the es Nucleoside Transporter. *J. Med. Chem.*, 46, 831-837 (2003)
34. Kamath, S. and **Buolamwini*, J. K.** Receptor-Guided Alignment-Based Comparative 3D-QSAR Studies of Benzylidene Malonitrile Tyrphostins as EGFR and HER-2 Kinase Inhibitors. *J. Med. Chem.* 46, 4657– 4668, (2003)
35. Assefa, H., Kamath, S. and **Buolamwini*, J. K.** 3D-QSAR and Docking Studies on 4-Anilinoquinazoline and 4-Anilinoquinoline Epidermal Growth Factor Receptor (EGFR) Tyrosine Kinase Inhibitors. *J. Comput.-Aided Mol. Design* 17, 475-493 (2003)
36. **Buolamwini, J. K.** and Ali-Osman, F. Rational Design of Novel Anticancer Agents. In *Brain Cancer Protocols* (Ali-Osman, F., ed.), Humana Press, Totowa, NJ, In Press (2004)
37. Kuo, C. L., Assefa, H., Saczewski, F., Brzozowski, Z., Kamath, S., **Buolamwini*, J. K.** and Neamati*, N. Application of CoMFA and CoMSIA 3D-QSAR and Docking Studies in Optimization of Mercaptobenzenesulfonamides as HIV-1 Integrase Inhibitors. *J. Med. Chem.* 47, 385-399 (2004)
38. Gupte, A. and **Buolamwini*, J. K.** Synthesis and Flow Cytometric Evaluation of Novel Halogen-Substituted Nitrobenzylthioinosine Analogs as es Transporter Inhibitors. *Bioorg. Med. Chem. Lett.* 14, 2257-2260 (2004).39.

- Addo, J. K. and **Buolamwini***, **J. K.** Synthesis and Evaluation of 5'-S-Aminoethyl-*N*⁶-azidobenzyl-5'-thioadenosine (SAEATA) Biotin Conjugate: A Bifunctional Photoaffinity Label for the Equilibrative Nitrobenzylthioinosine (NBMPR)-Sensitive (es) Nucleoside Transporter. *Bioconjugate Chemistry* 15, 536-540 (2004)
40. **Buolamwini***, **J. K.**, Addo, J. K., Kamath, S., Patil, S., Mason, D. and Ores, M. (2005) Small Molecule Antagonists of the MDM2 Oncoprotein as Anticancer Agents. *Curr. Cancer Drug Targets* 5, 57-71
 41. Thimmaiah, K. N., Easton, J. B., Germain, G. S., Morton, C. L., Kamath, S., **Buolamwini, J. K.** and Houghton, P. J. Identification of N¹⁰-Substituted Phenoxazines as Potent and Specific Inhibitors of Akt Signaling. *J. Biol. Chem.* 280, 31924-35 (2005)
 42. Ali-Osman*, F., Friedman, H., Antoun, G., Reardon, D., Bigner, D., **Buolamwini***, **J. K.** Rational Design and Development of Targeted Brain Tumor Therapeutics in *Brain Tumors* (Ali-Osman, F., ed.), Humana Press, Totowa, NJ, pp. 3-28 (2005).
 43. **Buolamwini, J. K.** A Survey of Novel Anticancer Drug Targets. In *Strategies for the Discovery and Clinical Testing of Novel Anticancer Agents* (Adjei, A. A. and Buolamwini, J. K., eds.), Elsevier Health Science. Pp. 1-35. (2006)
 44. Patil S. and **Buolamwini***, **J. K.** Recent Uses of Palladium Chemistry in Indole Synthesis. *Curr. Organic Synthesis* 3, 477-498 (2006)
 45. Kamath, S. and **Buolamwini***, **J. K.** (2006) Targeting EGFR and HER-2 Receptor Tyrosine Kinases for Cancer Drug Discovery and Development. *Medicinal Research Reviews* 26 (5), 569-594 (2006)
 46. Patil, S., Kamath, S., Neamati, N and **Buolamwini***, **J. K.** (2007) Synthesis and Biological Evaluation of Novel 5(H)-Phenanthridin-6-ones, 5(H)-Phenanthridin-6-one Diketoacid and Polycyclic Aromatic Diketoacid Analogs as New HIV-1 Integrase Inhibitors. *Bioorg. Med. Chem.* 15(3):1212-1228.
 47. Zhu, Z., Hoffman, P. and **Buolamwini***, **J. K.** (2007). Cardioprotective effects of novel tetrahydroisoquinoline analogues of nitrobenzylmercaptapurine riboside in an Isolated Rat Heart Model. *Am. J. Physiol. Heart and Circulation* 292(6):H2921-H2926.
 48. Lin, W. and **Buolamwini***, **J. K.** (2007) Synthesis, Flow Cytometric Evaluation and Identification of Highly Potent Dipyridamole Analogs as Equilibrative Nucleoside Transporter 1 (ENT1) Inhibitors. *J. Med. Chem.* 50, 3906-3920.
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