

Amol Kulkarni
Associate Professor
College of Pharmacy
Howard University
Washington, DC 20059

Education

- Doctor of Philosophy (Major: Chemistry)
The State University of New York at Buffalo
- Master of Pharmaceutical Sciences (Major: Pharmaceutical Chemistry)
University of Mumbai
- Bachelor of Pharmaceutical Sciences (Major: Pharmaceutical Sciences)
University of Mumbai

Employment

2015-present	Associate Professor, Department of Pharmaceutical Sciences College of Pharmacy, Howard University
2010-Present	Assistant Professor, Department of Pharmaceutical Sciences College of Pharmacy, Howard University
2008-2010	Postdoctoral Research Associate University of Houston
2006-2008	Associate Director, Combinatorial Chemistry Center University of Pittsburgh

Societies and Honors

Professional Societies

American Chemical Society
Sigma Xi
Indian Pharmaceutical Association

Honors and Awards

2014	Keystone Symposia Fellow
2014	Howard University Faculty Senate Award for "Outstanding contributions to Africa and African Diaspora"
2014	Certificate of Appreciation, Class of 2014
2013	Professor of the Year Award, College of Pharmacy, Class of 2017

2012 Professor of the Year Award, College of Pharmacy, Class of 2016
2012 Microgrant Travel Award, District of Columbia, Developmental Center for
AIDS Research (DC D-CFAR)
2005 Silbert Graduate Student Fellowship, SUNY Buffalo
2004 Mattern-Tyler Award for Excellence in Teaching, SUNY, Buffalo

Funded Grant Applications

2018-2019 Microgrant Award, District of Columbia Center for AIDS Research
Role: Principal Investigator. Total Award Amount: \$2,500.

2014-2015 Behavioural Science Foundation Award, Behavioural Science
Foundation (Role: Principal Investigator)
Total Award Amount: \$85,385

2014-2015 PCSP Research Award, Pilot and Collaborative Studies Program
Georgetown Howard Universities Center for Clinical and Translational
Research (Role: Principal Investigator)
Total Award Amount: \$50,000

2014-2019 U19 Research Award, National Institute of Allergy and Infectious
Diseases, NIH (Co-investigator)
Total Award Amount: \$ 3,211,769
My protected Budget: \$265,000 (20% effort)

2013-2014 Small Business Technology Transfer (STTR) Award, National Institute
of Allergy and Infectious Diseases, NIH (Co-investigator)
Total Award Amount: \$150,000
My protected budget: \$43,536

2011-2013 Newly Hired Investigator Award, District of Columbia, Developmental
Center for AIDS Research (Role: Principal Investigator)
Total Award Amount: \$30,000

Travel Grant Awards

- Microgrant Travel Award from DC D-CFAR (Spring 2012)
- Travel Grant Award to attend D3 (Distributed Drug Discovery) conference in Indianapolis in July 2013.

Publications in Peer-Reviewed Journals

After joining Howard University

Kulkarni, A. A., Sajith, A. M., Duarte, T. T., Tena, A., Spencer, C. T., Bowen, J. P. "Design, synthesis, and screening of sulfonyleurea-derived NLRP3 inflammasome inhibitors" *Medicinal Chemistry Research*, **2020**, 29, 126-135.
(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7223447/>)

Balasubramanian, A., Pilankatta, R., T., Teramoto, T., Sajith, A. M., Nwulia, E. A., Kulkarni, A. A., Padmanabhan, R. "Inhibition of dengue virus by curcuminoids" *Antiviral Research*, **2019**, 162, 71-78.
(<https://www.sciencedirect.com/science/article/pii/S0166354218303875>)

Xu, Q.; Kulkarni, AA; Sajith, AM; Hussein, D.; Brown D; Guner, OF; Reddy, MD; Watkins EB; Lassegue, B.; Griending, KK; Bowen, JP, "Design, synthesis, and biological evaluation of inhibitors of NADPH oxidase, NOX4" *Journal of Bioorganic Medicinal Chemistry*, **2018**, 26, 989-998.
(<https://www.ncbi.nlm.nih.gov/pubmed/29426628>)

Lin, X., Kont, Y., DeMarino, C., Ammosova, T., Kulkarni, A., Kumari, N., Jerebtsova, M., Vasquez-Meves, G.; Ivanov, A., Kovalskyy, D., Uren, A., Kashanchi, F., "Inhibition of HIV-1 infection in humanized mice and metabolic stability of protein phosphatase-1-targeting small molecule 1E7-03" *Oncotarget*, **2018**, 8, 76749-76769.
(<https://www.ncbi.nlm.nih.gov/pubmed/29100346>)

Adzhubei, A. A., Anashkina, A. A., Tkachev, Y. V., Kravatsky, Y. V., Shitova, M.S., Pushkarsky, T., Kulkarni, A., Makarnov, A. A., Bukrinsky, M. I.; "Modeling interactions between HIV-1 NEF and calnexin" *AIDS*, **2018**, 32, 2103-2111.
(<https://www.ncbi.nlm.nih.gov/pubmed/30005006>)

Balasubramanian, A., Teramoto, T., Kulkarni, A. A., Bhattacharjee, A. K., Padmanabhan, R. "Antiviral activities of selected antimalarials against dengue virus type 2 and Zika virus" *Antiviral Research*, **2017**, 137, 141-150.

Fortunak, J. M., de Souza, R. O., **Kulkarni, A. A.**, King, C. L., Ellison, T., Miranda, L. S. M. (2014) "Active Pharmaceutical Ingredients for Antiretroviral Treatment in Low- and Middle-income Countries: A Survey" *Antiviral therapy*, 19, 15-29.

Ammosova, T., Platonov, M., Ivanov, A., Kont, Y. S., Kumari, N., Kehn-Hall, K., Jerebtsova, M., **Kulkarni, A. A.**, Üren, A., Kovalskyy, D., Nekhai, S. (2014) 1E7-03, a Small Molecule Targeting Host Protein Phosphatase-1, inhibits HIV-1 transcription" *British Journal of Pharmacology* 171, 5059-5075.

Fortunak, J. M. D., Byrn, S. R., Dyson, B., Ekeocha, Z., Ellison, T., King, C. L., **Kulkarni, A. A.**, Conrad, C., Thompson, K. (2013) "An Efficient Green Chemical Synthesis of the Malaria Drug, Piperaquine" *Tropical Journal of Pharmaceutical Research*, 12, 791-798.

Hurley, L. L., Akinfiresoye, L., Nwulia, E., Kamiya, A., **Kulkarni, A. A.**, Tizabi, Y. (2013) "Antidepressant-like effects of curcumin in WKY rat model of depression is associated with an increase in hippocampal BDNF" *Behavioral Brain Research*, 239, 27-30.

Ghafoor, A. Z., Chang, B., King, C. L., Butcher, R. J., **Kulkarni, A. A.** (2013) "Methyl 2-bromo-3-(4-chlorobenzenesulfonamido)benzoate" *Acta Crystallographica*, E69, o311.

Kulkarni, A. A., King, C. L., Fortunak, J. M. D. and Butcher R. J. (2012) "4,7-Dichloroquinoline" *Acta Crystallographica*, E68, 1498.

Kulkarni, A. A., King, C. L., Fortunak, J. M. D. and Butcher R. J. (2012) "7-chloro-4-(piperazin-1-yl)quinoline" *Acta Crystallographica*, E68, 1497.

Before joining Howard University

"Direct Conversion of Carbon-Hydrogen to Carbon-Carbon Bonds by First Row Transition Metal Catalysis" **Kulkarni, A. A.**, Daugulis, O. *Synthesis* **2009**, 4087. (*Invited review*).

"Metamorphic Enzyme Assembly in Polyketide Diversification" Gu, L.; Wang, B.; **Kulkarni, A.**, Geders, T. W., Grindberg, R. V., Gerwick, L., Håkansson, K., Wipf, P., Smith, J. L., Gerwick, W.H., Sherman, D. H. *Nature* **2009**, 459, 731.

"Polyketide Decarboxylative Chain Termination Preceded by O-Sulfonation in Curacin A Biosynthesis" Gu, L.; Wang, B.; **Kulkarni, A.**; Gehret, J.; Lloyd, K.; Gerwick, L.; Gerwick, W.; Wipf, P.; Håkansson, K.; Smith, J. L.; Sherman, D. H. *J. Am. Chem. Soc.* **2009**, 131, 16033.

"Selective Tandem Enyne Metathesis for the Synthesis of Functionalized Cycloheptadienes" Diver, S. T.; Clark, D. A.; **Kulkarni, A. A.** *Tetrahedron* **2008**, 64, 6909.

"Cyclodimerization of Alkynes with Phosphine-Free Ruthenium Carbene Complexes: Carbene Consumption by a Shunted Alkyne Oligomerization" Diver, S. T.; **Kulkarni, A. A.**; Clark, D. A.; Peppers, B. P., *J. Am. Chem. Soc.* **2007**, 129, 5832-5833.

"Tandem Enyne Metathesis and Claisen Rearrangement: A Versatile Approach to Conjugated Dienes of Variable Substitution Patterns" Clark, D. A.; **Kulkarni, A. A.**; Kalbarczyk, K.; Schertzer, B.; Diver, S. T., *J. Am. Chem. Soc.* **2006**, 128, 15632-15636.

“2-Substituted-1,3-cyclohexadienes by Intermolecular Methylene-Free Tandem Enyne Metathesis” Kulkarni, A. A.; Diver, S. T., *Org. Synth.* **2006**, 83, 200-208.

“Functional Group Scope in Methylene-Free Tandem Enyne Metathesis” Peppers, B. P.; Kulkarni, A. A.; Diver, S. T., *Org. Lett.* **2006**, 8, 2539-2532.

“Ring Synthesis by Stereoselective Methylene-Free Enyne Metathesis” Kulkarni, A. A.; Diver, S. T., *J. Am. Chem. Soc.* **2004**, 126, 8110-8111.

“Cycloheptadiene Ring Synthesis by Tandem Intermolecular Enyne Metathesis” Kulkarni, A. A.; Diver, S. T., *Org. Lett.* **2003**, 5, 3463-3466.

“A bivalent Ligand (KDAN-18) Containing δ -Antagonist and κ -Agonist Pharmacophores Bridges δ_2 and κ_1 Receptor Phenotypes” Daniels, D. J.; Kulkarni, A. A.; Xie, Z.; Bhushan, R. G.; Portoghesi, P. S., *J. Med. Chem.* **2005**, 48, 1713-1716.

Peer-reviewed Monographs in electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)

- Sodium Bromate
- Potassium Bromate
- Calcium hypochlorite
- (-)(1S)-1-phenylethyl hydroperoxide and (+)(1R)-phenylethyl hydroperoxide
- Benzoyltrimethylsilane
- 2,5-cyclohexadien-1-one,4-hydroxy-4-methyl
- (+)-N, N'-(1S, 2S)-1,2-Diaminocyclohexanediylbis(2-pyridinecarboxamide)
- Diethyl N-Benzylideneaminomethylphosphonate
- Arsine, (1R)-[1,1'-Binaphthalene]-2,2'-diylbis[diphenyl- and
- Arsine, (1S)-[1,1'-Binaphthalene]-2,2'-diylbis[diphenyl-
- (R,R)-Bis(*tert*-butylmethylphosphino)methane
- Dibromoacetone

Patent Applications

- “NADPH Oxidase Inhibitors and Uses Thereof”
Inventors: Osman Guner, Bernard Lassegue, Kathy Griendling, Qian Xu, David Brown, J. Phillip Bowen, Amol Kulkarni, E. Black Watkins.
Application Number: 16/634,567 (Filed: January 27, 2020)

- “Lipophilic Curcumin Analogs and Methods of Inhibiting HIV-1, Treating latent HIV in Brain, and Preventing HIV-Mediated Cognitive Decline”
Inventors: Evaristus A. Nwulia and **Amol A. Kulkarni**
Application Number: 13/793,755 (Filed: March 11, 2013)
Pub. No.: US 2014/0051742 A1 (Publication Date: February 20, 2014)
- “Green Chemistry Synthesis of the Antimalarial Drug Amodiaquine”
Inventors: Fortunak, Joseph, M., **Kulkarni, Amol A.**, and King Christopher
Application Number: 61610267 (Filed: March 9, 2013)

Presentations

- **Kulkarni, Amol, A.** “Fostering diversity in research” e-Panel discussion, Keystone Symposia, June 28, 2018.
- **Kulkarni, Amol, A.** “Design, Synthesis, and biological Screening of NOX4 inhibitors” University of Georgia, Athens, GA, November, 30, 2017.
- **Kulkarni, Amol, A.** “Development of small molecules for inflammation-associated disorders” Mercer University, Atlanta, GA, December, 1, 2017.
- **Kulkarni, Amol, A.** “Drug development for inflammation-associated disease states” Capitol Hill, Washington, DC, November 2017.
- **Kulkarni, Amol, A.** “Preclinical drug development using natural-product inspired scaffolds” Health Disparities, Education, Awareness, Research, and Training Symposium, Houston, TX, June 19-24, 2017.
- **Kulkarni, A. A.;** Kumari, N.; Nwulia E. A.; Nekhai S. A. (2015). Development of Novel Curcuminoids for the Treatment of Alzheimer’s Disease and Other Neurocognitive Disorders. AD/PD 2015, Nice, France. (*Abstract accepted for presentation*)
- **Kulkarni, A. A.,** Kumari, N., Nekhai, S. A., Nwulia, E. A. (2014) “Development of Curcuminoids for Neurocognitive Disease” 2014 Minority Health and Health Disparities Grantees’ Conference, National Harbor, MD”.
- **Kulkarni, A. A.,** Kumari, N., McLean C., Hipolito, M., Nekhai, S., Nwulia, E. (2014) “Development of Curcumin-Inspired Compounds for the Treatment of HIV and Its Comorbidities” 248th ACS National Meeting and Exposition, San Francisco, CA.(The above poster was selected for the Sci-Mix poster session comprising of

“abstracts selected by division program chairs and represents the most exceptional abstracts submitted to participating divisions ”)

- **Kulkarni, A. A.** (2014) “Development of Novel Curcuminoids For the treatment of HIV-Associated Comorbidities” Department of Organic Chemistry Seminar Series, Palacky University, Olomouc, The Czech Republic. (Role: Presenting Author) Note: I was invited by Prof. Miroslav Soural to deliver this research presentation.
- **Kulkarni, A. A.;** King, C. L.; Ellison, T.; Fortunak, J. M. D. (2013) “Efficient Green Chemical Synthesis of HIV-1 protease inhibitor Darunavir” 17th Annual Green Chemistry and Engineering Conference, Bethesda, MD, USA. (Role: Presenting Author)
- **Kulkarni, A. A.;** Fortunak, J. M. D.; Ellison, T.; King, C. L.; Lee, M.; Conrad, C.; Fortunak, J. R.; Williams, J. (2012) “Green Chemical Synthesis of the Antimalarial Drug Piperaquine” 16th Annual Green Chemistry and Engineering Conference, Washington, DC, USA. (Role: Presenting Author)
- **Kulkarni, A. A.** (2012) “Development of Betulinic Acid Analogs as Entry and Maturation Inhibitors of HIV-1. 16th Annual National CFAR Conference, San Francisco, CA, USA. (Role: Presenting Author)
Note: This poster was selected by District of Columbia developmental Center for AIDS Research (DC D-CFAR) as one of the two presentations from the DC D-CFAR to be presented at the annual CFAR meeting in San Francisco.
- **Kulkarni, A. A.** (2011) “Ring Synthesis via Intermolecular Methylene-Free Enyne Metathesis” Department of Chemistry, Howard University, Washington, DC (Role: Presenting Author) Note: I was invited by Prof. William Stockwell, Department of Chemistry, to deliver this research presentation Research Presentations at Howard University.

Research Presentations at Howard University

- “Development of Small molecule Anti-Ebola Compounds” Howard University Research Week, 2017.
- “Small molecule development for innate immunity-derived inflammatory disorders” Howard University Research Day 2017. This poster won the 1st Prize in Junior Faculty category.
- “Development of 1E7-03 analogs with potent anti-Ebola activity.” Howard University Research Day 2016. This poster won the 1st Prize in Junior Faculty and overall category.

- Chang, B.; Ghafoor, A.; Angie, L.; Nekhai, S.; Nwulia, E. A.; **Kulkarni, A. A.** (2013) "Development of Novel Curcuminoids for the Treatment of HIV-Associated Dementia" Research Day, Howard University, Washington, D.C. USA (Role: Corresponding Author)
- Bernard, D.; **Kulkarni, A. A.** (2013) "Fostering an Emerging Future Scientist Pipeline" "Development of Novel Curcuminoids for the Treatment of HIV-Associated Dementia" Research Day, Howard University, Washington, D.C., USA (Role: Corresponding Author)
- Eapen, S. P.; Tran, T.; Nguyen, A.; **Kulkarni, A. A.** (2012) "Enantioselective Synthesis of Betulinic Acid Analogs as Potent Inhibitors of HIV-1" Annual Health Sciences Research Day, Howard University, Washington, DC, USA (Role: Corresponding Author) Note: The above poster received the 3rd prize at the 2012 Howard University Health Sciences Research Day.
- Burrison, T.; Debebe, G.; Kareem, V.; **Kulkarni, A. A.** (2012) "Synthesis of Bivalent Ligands to Probe the Heterodimerization of ORL-1 Receptor with Kappa Opioid Receptor Subtypes" Annual Health Sciences Research Day, Howard University, Washington, DC, USA (Role: Corresponding Author)

Reviewer Experience

- Served as a reviewer for internationally reputed journals, including *Organic Letters*, *Royal Society of Chemistry*, *Tetrahedron Letters*, *Current Organic Chemistry*, and *Synlett*.
- Served as a reviewer of Abstracts for National Institute on Minority Health and Health Disparities Grantees' Conference in December 2014.
- Served as a reviewer of abstracts for American Pharmacist Association Meeting in Fall 2013.
- Served as a Member of Editorial Board on "Journal of Autacoids"
- Served as a reviewer of Grant Applications for Petroleum Research Fund, CDRF Global, and District of Columbia Developmental Center for AIDS Research (DC D-CFAR).

Mentorship Experience

- Mentored/mentoring over 40 Pharm. D. students, 3 graduate (Ph.D.) students, 3 high-school students, and 2 postdoctoral research associate
- Served on the thesis committees of 3 Ph.D. students
- Admitted to the Keystone Symposia Fellows Program for the involvement of the students from underrepresented minority (URM) population
- Faculty Advisor to Phi-Delta-Chi Fraternity (Beta Nu chapter) and Drug Information Association (DIA) Chapter at Howard University
- Class Advisor, Pharm. D. Class of 2016.

Teaching Responsibilities

Pharm. D. Courses

Course	Role	Semester
Pharmaceutical Chemistry II 2015-17	Instructor and Course coordinator	Fall
Anions and Cations in 2015-17 Biological Systems	Instructor and Course coordinator	Fall
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor	Spring 2015-17
Pharmaceutical Chemistry II	Instructor and Course coordinator	Spring 2015-17
Anions and Cations in Biological Systems	Instructor and Course coordinator	Fall 2014
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor	Fall 2014
Pharmaceutical Chemistry II	Instructor and course coordinator	Spring 2014
Anions and Cations in Biological Systems	Instructor and Course coordinator	Spring 2014
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor	Fall 2013
Pharmaceutical Chemistry II	Instructor and course coordinator	Fall 2013
Anions and Cations in Biological Systems	Instructor and Course coordinator	Fall 2013
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor	Spring 2013
Pharmaceutical Chemistry II	Instructor	Spring 2013
Anions and Cations in Biological Systems	Instructor and course coordinator	Fall 2012
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor and Course coordinator	Fall 2012
Pharmaceutical Chemistry II	Instructor	Spring 2012
Anions and Cations in Biological Systems	Instructor	Spring 2012
Pharmaceutical Chemistry I Pharmaceutical Sciences Lab.	Instructor and course coordinator	Fall 2011
Pharmaceutical Chemistry II	Instructor and Course coordinator	Fall 2011
Anions and Cations in Biological Systems	Instructor and Course coordinator	Fall 2011
Introduction to Pharmacy	Instructor and Course coordinator	Fall 2011
Ethics in Health Sciences	Instructor and Facilitator	Fall 2011
Pharmaceutical Chemistry I	Instructor and Course coordinator	Spring 2011

Pharmaceutical Sciences Lab.	Instructor	Spring 2011
Pharmaceutical Chemistry II	Instructor	Fall 2010
Introduction to Pharmacy	Instructor	Fall 2010

I was awarded the **“Professor of the Year”** Award for the academic years 2011-2012 and 2012-2013 for excellence in teaching.

Ph. D. Courses

Course	Role	Semester
Research Methods	Instructor	Fall 2014
Research Methods	Instructor	Fall 2013
Organometallic Chemistry In Drug Synthesis	Instructor and course coordinator	Spring 2012
Research Methods	Instructor	Fall 2011

I developed the course “Organometallic Chemistry in Drug Synthesis” upon joining Howard University.

Participation in Colloquia

- Participation as an instructor in Colloquia on Medicinal Chemistry and mechanism of action to fourth year Pharm. D. students, Fall 2011, Spring 2012, and Spring 2013.
- Member of the faculty team involved in incorporating the “Cultural Competence” component into colloquia offered to fourth year Pharm. D. students for the years 2011, 2012, and 2013.

Development of Novel Teaching Methodology

- Utilized “Flipping the Classroom” technology for the Fall 2014-16
- Adoption of “Lecture Evaluation Forms” since Fall 2010
- Introduced students to “Scifinder Scholar”, a scientific search engine for learning advanced concepts in Pharmaceutical Chemistry.

Services to Howard University

- Development of chemistry education programs for high-school students
- Portfolio Reviewer for Pharm. D. students
- Chair, Graduate Admissions Committee (Fall 2012-present)

- Co-chair, Faculty and Staff subcommittee for ACPE Accreditation Visit (2011-2012)
- Graduate Curriculum Committee (Spring 2011 to present)
- TA and Awards Committee (Spring 2011 to present)
- Admissions, Recruitment and Retention Committee (Fall 2011 to present)
- Research development and Graduate Programs Committee (Fall 2010 to present)
- Faculty Student Research Committee, Center of Excellence (Fall 2011 to present)
- College of Pharmacy Transition Committee (Spring 2011 to Fall 2011)
- Curriculum, Instructional and Resources Committee (Fall 2011-present)
- Minute-Keeper, Department of Pharmaceutical Sciences (Spring 2011 to present)
- Continuing Professional Education and Alumni Affairs (Fall 2013 to present)
- Senior Awards Committee (Spring 2013-present)
- Task force to develop a code of professional conduct in the College of Pharmacy (Spring 2012)
- Associate Dean Search Committee (Spring 2013)
- Planning and Organizing Committee, Howard University Research Day 2013
- NTDP Administrative Assistant Search Committee (Summer 2014)

Service on committees during 2016-17

- Admissions, Recruitment, and Retention committee, September 2016-present (co-chair)
- Graduate admissions committee (chair, September 2013-present)
- Pharmaceutical Sciences Chair Search Advisory Committee (March 2017-present)
- Research, Development, and Graduate Programs Committee (September 2016-present)
- Continuing Professional Education and Alumni Affairs (September 2016 – present)
- Graduate curriculum committee (September 2016-present)
- Appointment Promotion, Tenure Committee (ad hoc member, September 2016-December 2016)
- Bylaws Revision Committee (ad hoc member, September 2016 to October 2016)

Service to the Profession

Board of Managers, Chemical Society of Washington (2015-present)

Professional/Scientific Services

- Mentored a high school student, Ms. Sidney Richards during 2016-17 year.

- Participated in the Science-Montgomery and mentored Ms. Mehana Daftary in 2012 and 2013
- Served as a moderator for Howard University Research Day (Spring 2011)
- Served as a judge for Howard University Research Day (Spring 2011)
- Served as a judge for Howard University Research Week in 2016, 2017, and 2018.