

Dr. Muneer Abbas

Howard University
Associate Professor
Microbiology
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Professional Positions

Molecular Genetics Lab. Director at The NHGC, College, approximately 960 hours spent per year. (February 15, 2015 - January 15, 2030).

Biorepository Director, College, approximately 100 hours spent per year. (March 18, 2015 - 2029).

Education

Immunogenetics associations with health disparities (Post-Doctoral training). Howard University, Washington, DC, United States. 2008 - 2011.

PhD, Microbiology, Immunogenetics. Howard University, 2008.

MS, Biology. Yarmouk University, 1996.

BS, Biology. Yarmouk University, 1993.

Licensures and Certifications

Implicit Bias: A Practical Guide for Healthcare Settings, The George Washington University School of Medicine and Health Sciences. (February 22, 2023 - Present).

Bloodborne Pathogens and Standard Precautions, Clinical, HealthStream. (November 14, 2022 - Present).

Emergency Preparedness, HealthStream. (November 14, 2022 - Present).

Suicide Risks and Prevention, HealthStream. (November 14, 2022 - Present).

Infection, Emerging, HealthStream. (November 11, 2022 - Present).

Learning Management System (LMS) Essentials, Howard University CETLA. (November 3, 2020 - Present).

IT Security Awareness Training, HealthStream. (March 30, 2018 - Present).

CME Certificate, The American Association for Cancer Research. (2015 - Present).

Scholars Research Training program, Howard/Hopkins Cancer Centers Partnership Education and Mentoring Core. (2012 - Present).

Advanced Training Course, Frontiers in Stem Cells in Cancer, Howard University. (2011 - Present).

Faculty Author Certificate, Howard University. (2009 - Present).

GTI's QuickScreen, B Screen, QID, and C2ID ELISA assays., American Board of Histocompatibility and Immunogenetics (ABHI) at Howard University Hospital. (2006 - Present).

HLA SSO Typing and antibody screening, TEPNEL Lifecodes, Howard University. (2006 - Present).

Certificate of training on "Protocol and Analysis of LABType HLA typing Products", One Lambda, Inc. at Howard University Hospital. (2003 - Present).

Training Certificate by Orchid Diagnostics on using LifeMatch HLA SSO Typing and LifeMatch HLA antibody screening., Howard University Hospital. (2003 - Present).

Training course in Human Leukocyte antigen typing using Micro SSP Primer Recognition Sites, Sequence Specific Primer Amplification and PCR Troubleshooting. This certification was awarded by One Lambda, Inc., King Khalid University College of Medicine. (2001 - Present).

Leishmania Typing using Monoclonal antibodies, Al-Hassan II University. (1995 - Present).

Professional Memberships

American Association for Cancer Research. (2015 - 2022).

The American Society of Human Genetics (ASHG). (2014 - 2022).

American Society for Histocompatibility and Immunogenetics (ASHI). (2006 - 2022).

American Society for Microbiology(ASM). (2006 - 2022).

Awards and Honors

The Special Unit Award, Howard University College of Medicine. (2018).

HU Junior faculty scholar/ RCMI supplement award (\$20,000). Scholar-in-Training Award supported by Center to Reduce Cancer Health Disparities (CRCHD) of the National Cancer Institute., Howard University. (2017).

Howard University Bridge Fund/Pilot Study Award Program Recipient. 2015-2016., Howard University/ College of Medicine. (2016).

Bridge Funds and Pilot Study Awards program, Howard University, College of Medicine. (2015).

I was awarded a full ride to attend the Eighth AACR Conference on The Science of Cancer Health Disparities, to present my research.

The conference featured the most innovative science in cancer health disparities across the entire cancer continuum. Each Plenary Session focused on a section of the cancer continuum and is designed to include presentations from the top basic, translational, clinical, and population researchers to highlight multidisciplinary approaches to cancer health disparities. Additional sessions addressed challenges and opportunities in precision medicine, interventional studies in special populations, and resources and initiatives in cancer health disparities research.

The award funding for this conference was made possible (in part) by the National Cancer Institute of the National Institutes of Health under Award Number R13CA203380., Eighth AACR Conference on The Science of Cancer Health Disparities. (2015).

Education and Monitoring Core. Support for the summer Health Disparities Scholars Research Training program., Howard/Hopkins Cancer Center Partnership. (2012).

Faculty Author Certificate in recognition of work Published during 2008-09. Founders Library, Howard University., Howard University/Founders Library. (2009).

Publications

Abbas, M., Tankosic, D., Spann, J. F., Leclair, A., Dube, M. J., Gaskin, J. A. Experimental Studies of Electrostatic Charging of Individual Lunar Dust Grains by Photoelectric Emissions and by Electron Impact. *NLSI Lunar Science Conference* (vol. 1415, pp. 2033). <https://ui.adsabs.harvard.edu/abs/2008LPICo1415.2033A>

Abbas, M., Craven, P. D., Spann, J. F., Tankosic, D., Leclair, A., Witherow, W. K., Camata, R., Gerakines, P. Laboratory Measurements of Optical Properties of Micron Size Individual Dust Grains. In A. N. Witt (Ed.), *Astrophysics of Dust* (pp. 123). <https://ui.adsabs.harvard.edu/abs/2003asdu.confE.123A>

Tankosic, D., Abbas, M. Laboratory Studies of Charging Properties of Dust Grains in Astrophysical/Planetary Environments. *Journal of Physics Conference Series* (vol. 399, pp. 012024). <https://ui.adsabs.harvard.edu/abs/2012JPhCS.399a2024T>

Abbas, M., Tankosic, D., Craven, P. D., Spann, J. F., Leclair, A., West, E. A., Taylor, L., Hoover, R. Measurements of Photoelectric Yield and Physical Properties of Individual Lunar Dust Grains. In Board, L. P. I. Editorial (Ed.), *Dust in Planetary Systems* (vol. 1280, pp. 13). <https://ui.adsabs.harvard.edu/abs/2005LPICo1280...13A>

Abbas, M., Tankosic, D., Craven, P. D., Hoover, R. B., Taylor, L. A., Spann, J. F., Leclair, A., West, E. A. Measurements of Photoelectric Yields of Individual Lunar Dust Grains. In H. Krueger & A. Graps (Eds.), *Dust in Planetary Systems* (vol. 643, pp. 165-170). <https://ui.adsabs.harvard.edu/abs/2007ESASP.643..165A>

Qasem, M., Ricks-Santi, L., Naab, T., Rajak, F., BEYENE, D., Abbas, M., Kassim, K., Copeland, R., Kanaan, Y. (2022). Inverse Correlation of KISS1 and KISS1R Expression in Triple-negative Breast Carcinomas from African American Women. *Cancer Genomics Proteomics*, 19(6). <https://pubmed.ncbi.nlm.nih.gov/36316037/>

Saadatmand, F., Abbas, M., Apprey, V., Krishma, T., Kwabi-Addo, B. (2022). Sex differences in saliva-based DNA methylation changes and environmental stressor in young African American adults. *Full text links full text provider logo Actions Share Page navigation Title & authors Abstract Conflict of interest statement Figures Similar articles References Publication types MeSH terms Substances Related information Grant support LinkOut - more resources PLoS One*, 17(9), 1-15. <https://pubmed.ncbi.nlm.nih.gov/36067197/>

Aiello, C., Abendroth, J., Abbas, M., Afanasev, A., Agarwal, S., Banerjee, A., Beratan, D., Belling, J., Kurian, P., ..., Wang, Q. (2022). A Chirality-Based Quantum Leap. *ACS Nano*. <https://pubs.acs.org/doi/10.1021/acsnano.1c01347>

Abbas, M., Kurian, P. (2022). Quantum probes in cancer research. *Nature Reviews Cancer*. <https://pubmed.ncbi.nlm.nih.gov/35296867/>

- Brim, H., Taylor, J., Abbas, M., Vilmenay, K., Song-Naba, W., Daremipouran, M., Varma, S., Lee, E., Pace, B., Gupta, K., Nekhai, S., O'Neil, P., Ashktorab, H. (2021). The gut microbiome in sickle cell disease: Characterization and potential implications. *Plos One*, 16(8). <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0255956>
- Brim, H., Taylor, J., Abbas, M., Vilmenay, K., Daremipouran, M., Varma, S., Lee, E., Pace, B., Song-Naba, W. L., Gupta, K., Nekhai, S., Ashktorab, H. (2021). The gut microbiome in sickle cell disease: Characterization and potential implications. *PLOS ONE*.
- Retland, N., Aloufi, A., Alyahyawi, A., Shakoory, A., Aubee, J., Thompson, K., Abbas, M. (2020). *The role of human 5-HTR2A in miRNA expression in the triple negative breast cancer cell line*. (16_Supplement ed., vol. 80, pp. 2534). https://aacrjournals.org/cancerres/article/80/16_Supplement/2534/642104/Abstract-2534-The-role-of-human-5-HTR2A-in-miRNA
- Brim, Afsari, A., Atefi, N., Retland, N., Abbas, M., Naab, T., Shokrani, B., Laiyemo, A., Lee, E., Nourai, S., Ashktorab, H. (2018). *Abstract 5056: HPV, HIV and male gender as major risk factors for anal neoplastic transformation in African Americans* (13 Supplement ed., vol. Yes, pp. 5056). *Cancer Research/ Tumor Biology*.
- Paller, C., Zhou, X., Heath, E., Taplin, M., Mayer, T., Stein, M., Buble, G., Pili, R., Hudson, T., Kakarla, R., Abbas, M., Andres, N., Dowling, D., King, S., Burns, A., Wangler, W., Drake, C., Antonarakis, E., Eisenberger, M., Denmeade, S., Rudek, M., Rosner, G., Carducci, M. (2018). Muscadine grape skin extract (MPX) in men with biochemically recurrent prostate cancer: a randomized, multicenter, placebo-controlled clinical trial. *Clinical Cancer Research*, 24(2), 306-315.
- Brim, H., Yooseph, S., Lee, E., Sherif, Z., Abbas, M., Layemo, A., Varma, S., Torralba, M., Dowd, S., Nelson, K., Pathmasiri, W., Sumner, S., de Vos, W., Liang, Q., YU, J., Zoetendal, E., Ashktorab, H. (2017). A Microbiomic Analysis in African Americans with Colonic Lesions Reveals *Streptococcus* sp.VT162 as a Marker of Neoplastic Transformation. *Genes*, 8(11), Marshall Islands.
- Ricks-Santi, L., McDonald, T., Gold, B., Dean, M., Thompson, N., Abbas, M., Wilson, B., Kanaan, Y., Naab, T., Dunston, G. (2017). Next Generation Sequencing Reveals High Prevalence of BRCA1 and BRCA2 Variants of Unknown Significance in Early-Onset Breast Cancer in African American Women. *Ethnicity and Disease*, 27(2), 169-178.
- Paller, C., Taplin, M., Stein, M., Buble, G., Pili, R., Mayer, T., Zhou, C., Hudson, T., Abbas, M., Andres, N., Dowling, D., King, S., Drake, C., Antonarakis, E., Eisenberger, M., Denmeade, S., Rudek, M., Carducci, M. (2017). *A phase II study of muscadine grape skin extract in men with biochemically recurrent prostate cancer*. (Award ed., vol. Funded, pp. 284-284). *Journal of Clinical Oncology*.
- Swanson, G., Miller, S., Alyahyawi, A., Wilson, B., Sadaatmand, F., Lee, C., Dunston, G., Abbas, M. (2017). Genetic polymorphisms in the serotonin receptor 7 (HTR7) gene are associated with cortisol levels in African American young adults. *f1000 Research*, 1-12.
- Wilson, B., Ettienne, E., Apprey, V., Ofeogbu, A., Abbas, M., Dunston, G., Sadaatmand, F. (2017). Opioid Metabolizing Enzyme Allele Frequencies and Drug Use in a Cohort of African American Young Adults. *ARC Journal of Addiction*, 2(2), 4-9.
- Abbas, M., Berka, N., Khraiweh, M., Ramadan, A., Apprey, V., Furbert-Harris, P., Quinn, T., Brim, H., Dunston, G. (2016). Genetic Polymorphisms of TLR4 and MICA are Associated with Severity of Trachoma Disease in Tanzania. *Autoimmune Infect Dis*, 2(3), 1-14.

- Ogindo, C. O., Khraiweh, M. H., George, Jr, M., Brandy, Y., Brandy, N., Gugssa, A., Ashraf, M., Abbas, M., Southerland, W. M., Lee, C., Bakare, O., Fang, Y. (2016). Novel Drug Design for Chagas Disease via Targeting Trypanosoma cruzi Tubulin: Homology Modeling and Binding Pocket Prediction on Trypanosoma cruzi Tubulin Polymerization Inhibition by Naphthoquinone Derivatives. *Bioorganic and Medicinal Chemistry*, 24(16), 3849 -3855.
- Ibad, A., Naab, T., Kanaan, Y., Ricks-Santi, L., Abbas, M. (2016). HPVs detected in African Americans Not Represented in Vaccines. *Journal of Cancer Prevention & Current Research*, 5(2), 1-2.
- Ogindoa, c., Khraiweh, M., George, M., Brandy, Y., Gugssa, A., Ashraf, M., Abbas, M., Southerland, W., Lee, C., Bakare, O., Fang, Y. (2016). Novel drug design for Chagas disease via targeting Trypanosoma cruzi tubulin: Homology modeling and binding pocket prediction on Trypanosoma cruzi tubulin polymerization inhibition by naphthoquinone derivatives. 24(16), 3849-3855.
- Abbas, M., Mason, T., Ricks-Santi, L., Bonney, G., Apprey, V., Kittles, R., Ahaghotu, c., Dunston, G. (2016). Association of IL-10 promoter polymorphisms with prostate cancer risk in African-Americans.
- JingwiAbbas, E., Abbas, M., Ricks-Santi, L., Winchester, D., Beyene, D., Day, A., Naab, T., Kassim, K., Dunston, G., Copeland, R., Kanaan, Y. (2016). Vitamin D receptor genetic polymorphisms are associated with PSA level, Gleason score and prostate cancer risk in African-American men. *Anticancer Res, Funded*(3), 1549-58.
- Brown, C., McDonald, J., Abbas, M., Dunston, G., Kanaan, Y., Ricks-Santi, L. (2016). *BRCA1 and BRCA2 mutational spectra in African American men with prostate cancer* (3rd ed., vol. 25). American Association for Cancer Research.
- Santi, L., McDonald, J., Brown, C., Prince, L., Abbas, M., Dunston, G. (2016). *Targeted next-generation sequencing of hotspots in cancer genes in normal-tumor breast cancer patients of African ancestry reveals novel and known mutations* (3rd ed., vol. 25, pp. b21). American Association for Cancer Research.
- Miranda, M., Suarez, E., Abbas, M., Chinea, A., Tosado, R., Mejias, I., Boukli, N., Dunston, G. (2015). HLA Class I & II Alleles in Multiple Sclerosis patients from Puerto Rico. *Monograph*(1), 18-23.
- Winchester, D., Ricks-Santi, L., Mason, T., Abbas, M., Copeland, R., Beyene, D., Jingwi, E., Dunston, G., Kanaan, Y. (2015). SPINK1 Promoter Variants Are Associated with Prostate Cancer Predisposing Alterations in Benign Prostatic Hyperplasia Patients. *Anticancer Res, Funded*(Honor), 3811-3819.
- Winchester, D., Copeland, R., Mason, T., Abbas, M., Copeland, R., Copeland, R., Copeland, R., Copeland, R., Kanaan, Y. (2015). SPINK1 Promoter Variants Are Associated with Prostate Cancer Predisposing Alterations in Benign Prostatic Hyperplasia Patients. *Anticancer Res*, 35(7), 3811–3819.
- Wilson, B., Ricks-Santi, L., Mason, T., Abbas, M., Kittles, R., Dunston, G., Kanaan, Y. (2015). Admixture Mapping Links RACGAP1 Regulation to Prostate Cancer in African Americans. *Cancer Genomics and Proteomics*, 15(3), 185-191.
- Copeland, R., Abbas, M., Copeland, R., Winchester, D., Copeland, R., Copeland, R., Naab, T., Copeland, R., Copeland, R., Copeland, R., Kanaan, Y. (2015). Vitamin D receptor genetic

- polymorphisms are associated with PSA level, Gleason score and prostate cancer risk in African-American men. *Anticancer Res*, 35(3), 1549--1558.
- Tankosic, D., Abbas, M. (2013). *Experimental Investigation of Charging Properties of Interstellar Type Silica Dust Grains by Secondary Electron Emissions* (vol. 222, pp. 202.04). <https://ui.adsabs.harvard.edu/abs/2013AAS...22220204T>
- Tankosic, D., Abbas, M. (2013). *Study of the Effects of the Electric Field on Charging Measurements on Individual Micron-Size Dust Grains by Secondary Electron Emissions* (pp. 2807). <https://ui.adsabs.harvard.edu/abs/2013LPI....44.2807T>
- Abbas, M., Tankosic, D., LeClair, A. C., Spann, J. F. (2012). Charging of Dust Grains in Astrophysical Environments by Secondary Electron Emissions. *The Astrophysical Journal*, 756, 41. <https://ui.adsabs.harvard.edu/abs/2012ApJ...756...41A>
- Ricks-Santi, L., Apprey, V., Mason, T., Abbas, M., Hernandez, W., Hooker, S., Doura, M., Bonney, G., Dunston, G., Kittles, R., Ahaghotu, C. (2012). Identification of genetic risk associated with prostate cancer using ancestry informative markers. *Prostate Cancer Prostatic Dis*, 4, 359-364.
- Tankosic, D., Abbas, M. (2012). *Laboratory Measurements on Charging of Individual Micron-Size Apollo-11 Dust Grains by Secondary Electron Emission* (pp. 1623). <https://ui.adsabs.harvard.edu/abs/2012LPI....43.1623T>
- Khraiwesh, M. H., Lee, C. M., Brandy, Y., Akinboye, E. S., Berthe, S., Gittens, G., Abbas, M., Ampy, F. R., Ashraf, M., Bakare, O. (2012). Antitrypanosomal Activities and Cytotoxicity of Some Novel Imido-substituted 1,4-Naphthoquinone Derivatives. 1, 27-33.
- Ricks-Santi, L., Mason, T., Abbas, M., Dunston, G., Kolluri, S., Gold, B., Im, K., Lautenberger, J., Dean, M., Bailey-Wilson, J., Carpten, J., Ahaghotu, C. (2011). *Identification of prostate cancer genes in the African American Hereditary Prostate Cancer (AAHPC) study*.
- Abbas, M., Tankosic, D., Craven, P. D., LeClair, A. C., Spann, J. F. (2010). Lunar Dust Grain Charging by Electron Impact: Complex Role of Secondary Electron Emissions in Space Environments. *The Astrophysical Journal*, 718, 795-809. <https://ui.adsabs.harvard.edu/abs/2010ApJ...718..795A>
- Abbas, M., Bobo, L., Hsieh, Y.-H., Berka, N., Dunston, G., Bonney, G., Apprey, V., Quinn, T., West, S. (2009). Human Leukocyte Antigen (HLA)-B, DRB1, and DQB1 Allotypes Associated with Disease and Protection of Trachoma Endemic Villagers.
- Abbas, M. (2008). *Association of polymorphisms in innate and specific immune response genes in Trachoma*. Howard University: ProQuest.
- Abbas, M., Tankosic, D., Spann, J. F., Leclair, A., Dube, M. J., Gaskin, J. A. (2008). *Lunar Dust Charging by Secondary Electron Emission and its Complex Role in the Lunar Environment* (pp. 1153). <https://ui.adsabs.harvard.edu/abs/2008LPI....39.1153A>
- Tankosic, D., Abbas, M. (2008). *Measurements on Charging of Apollo 11 and 17 Lunar Dust Grains by Low Energy Electrons* (pp. 1202). <https://ui.adsabs.harvard.edu/abs/2008LPI....39.1202T>
- Abbas, M., Bobo, L., Berka, N., Bonney, G., Apprey, V., Dunston, G. (2008). *Association of polymorphisms in innate and adaptive immune response genes in an East African cohort with trachoma*. Human Immunology:.

- Abbas, M., Tankosic, D., Spann, J. F., Dube, M. J., Gaskin, J. A. (2007). *Laboratory Measurements of Charging of Apollo 17 Lunar Dust Grains by Low Energy Electrons* (vol. 2007, pp. AE31A-0039). <https://ui.adsabs.harvard.edu/abs/2007AGUFMAE31A0039A>
- Abbas, M., Tankosic, D., Craven, P. D., Spann, J. F., LeClair, A., West, E. A. (2007). Lunar dust charging by photoelectric emissions. *Planetary and Space Science*, 55, 953-965. <https://ui.adsabs.harvard.edu/abs/2007P&SS...55..953A>
- Abbas, M., Tankosic, D., Craven, P. D., Spann, J. F., LeClair, A., West, E. A., Weingartner, J. C., Tielens, A. G. G. M., Nuth, J. A., Camata, R. P., Gerakines, P. A. (2006). Photoelectric Emission Measurements on the Analogs of Individual Cosmic Dust Grains. *The Astrophysical Journal*, 645, 324-336. <https://ui.adsabs.harvard.edu/abs/2006ApJ...645..324A>
- Abbas, M., Tankosic, D., Craven, P. D., Hoover, R. B., Taylor, L. A., Spann, J. F., Leclair, A., West, E. A. (2006). *Photoelectric Emission Measurements on Apollo 17 Lunar Dust Grains* (pp. 1415). <https://ui.adsabs.harvard.edu/abs/2006LPI....37.1415A>
- Abbas, M., Tankosic, D., Craven, P., Hoover, R., Taylor, L., Spann, J., Leclair, A., West, E. (2006). *Laboratory Measurements of Optical and Physical Properties of Individual Lunar Dust Grains* (vol. 36, pp. 3238). <https://ui.adsabs.harvard.edu/abs/2006cosp...36.3238A>
- Abbas, M., Craven, P. D., Spann, J. F., Tankosic, D., Leclair, A., West, E. A. (2004). *Laboratory Experiments on Charging of Individual Dust Grains* (vol. 2004, pp. SH43B-02). <https://ui.adsabs.harvard.edu/abs/2004AGUFMSH43B..02A>
- Abbas, M., Craven, P. D., Spann, J. F., Tankosic, D., LeClair, A., Gallagher, D. L., West, E. A., Weingartner, J. C., Witherow, W. K., Tielens, A. G. G. M. (2004). Laboratory Experiments on Rotation and Alignment of the Analogs of Interstellar Dust Grains by Radiation. *The Astrophysical Journal*, 614, 781-795. <https://ui.adsabs.harvard.edu/abs/2004ApJ...614..781A>
- Abbas, M., Berka, N., Bobo, L., Dunston, G. (in press). DNA yield from Buccal swabs and its utilization in HLA typing using luminex SSO bead technology.
- Abbas, M., Craven, P., Spann, J., Tankosic, D., Leclair, A., Gallagher, D., West, E., Weingartner, J., Witherow, W. (2004). *Laboratory experiments on rotation of micron size cosmic dust grains with radiation* (vol. 35, pp. 3040). <https://ui.adsabs.harvard.edu/abs/2004cosp...35.3040A>
- Abbas, M., Craven, P. D., Spann, J. F., Witherow, W. K., West, E. A., Gallagher, D. L., Adrian, M. L., Fishman, G. J., Tankosic, D., Leclair, A., Sheldon, R., Thomas, E. (2003). Radiation pressure measurements on micron-size individual dust grains. *Journal of Geophysical Research (Space Physics)*, 108, 1229. <https://ui.adsabs.harvard.edu/abs/2003JGRA..108.1229A>
- Abbas, M., Craven, P. D., Spann, J. F., West, E., Pratico, J., Tankosic, D., Venturini, C. C. (2001). Photoemission Experiments for Charge Characteristics of Individual Dust Grains. *Physica Scripta Volume T*, 98, 99-103. <https://ui.adsabs.harvard.edu/abs/2001PhST...98...99A>

Presentations

- Abbas, M., Kurian, P. (PI), Gori, M. (Collaborator), Dunston, G. (Investigator), Quantum Biology Gordon Research Conference/Emerging Methodologies to Investigate Quantum Effects in Biology, "Using Quantum Correlations among Electrodynamic Fluctuations to Distinguish

Serotonin Receptor Wild-Type and Variant Response," Galves Hotel, Galveston, TX, United States. (March 19, 2023).

Abbas, M., Howard University research week, "Association of IL-10 promoter polymorphisms with prostate cancer risk in African-Americans.." (April 16, 2018).

Abbas, M., Department of Microbiology Symposium, "Immunogenetics in health and diseases." (June 1, 2017).

Abbas, M., Cobb Laboratory Research Symposium, Howard University Research Week, "Building the Howard University Biorepository." (April 7, 2016).

Abbas, M., DIDARP (Diversity-promoting Institutions Drug Abuse Research Program) Dissertation and Pilot Studies., "Genetic Variation in Serotonin Receptor Type 7 (5-HT7) Gene and its Association with C-reactive Protein (CRP) Levels in African-Americans.." (March 1, 2012).

Contracts, Fellowships, Grants and Sponsored Research

Kurian, P. (Principal), Abbas, M. (Co-Principal), "Fast Detection of COVID-19 in the UV," Sponsored by NIH/RCMI, Howard University, \$50,000.00. (February 1, 2022 - May 1, 2023).

Abbas, M. (Co-Principal), Kurian, P. (Co-Principal), Procopio, M. (Principal), "QLCI-CG: Conceptualizing a Quantum Information Bioscience Institute for Quantum Sensing and Simulations in Novel Hybrid Architectures," Sponsored by NSF, Federal, \$103,701.00. (September 1, 2019 - August 31, 2022).

Tylor, R., Abbas, M. (Supporting), "NIH/P50 Center for Hemoglobin Research in Minorities (CHaRM).," Sponsored by NIH, Federal, \$1,428,211.00. (2018).

Saadatmand, F. (Principal), Dunston, G. (Co-Principal), Abbas, M. (Supporting), "Gender stratification of behavioral and biological pathways associated with violence exposure, depression, immune function, and risks to HIV/AIDS," Sponsored by NIH, Federal, \$60,000.00. (2017).

Saadatmand, F. (Principal), Georgia, D. (Co-Principal), Abbas, M. (Co-Principal), "Violence exposure, immune functions & HIV/AIDS risks in African American," Sponsored by NIH, Federal, \$359,440.00. (2017).

Abbas, M., "Howard University College of Medicine Bridge Funds and Pilot Award Program," Sponsored by Howard University College of Medicine Bridge Funds and Pilot Award Program,, Private, \$25,000.00. (2016).

Abbas, M., "Genetic Variation in the Human Serotonin Receptor Gene (5- HT7) and Its Association with Immune Response," Sponsored by NIH, Federal, \$14,000.00. (2013).

Research Activity

"Fast Optical Detection and Discrimination of Viral Pathogens" (On-Going). (March 2022 - Present).

We created a precise model of the exterior tryptophan chromophore network of SARS-CoV-2, including the spike trimer, membrane, and nucleocapsid protein structures from the Protein Data Bank. Our calculations show that the single virion's UV superradiant enhancement is over a thousand times the single-tryptophan spontaneous emission rate, and its optical response is distinct from simpler viruses like rhinoviruses and enteroviruses. We will explore using femtosecond adaptive spectroscopic techniques with enhanced

resolution via coherent anti-Stokes Raman scattering (FASTER CARS) to experimentally validate the downstream CARS signatures of such collective optical behavior. This method has been promising in the last two decades for probing related vibrational features in Raman scattering at the single-virion level.

"Whole genome sequencing in African American Hereditary Prostate Cancer" (Planning). (January 2023 - 2027).

The purpose of this Research activity is to investigate the genome-wide linkage (GWL) analysis in African American multiplex PCa families from the AAHPC study to detect susceptibility loci associated with hereditary prostate cancer susceptibility in AAs.

"Using Quantum Correlations among Electrodynamical Fluctuations to Distinguish Serotonin Receptor Wild-Type and Variant Response" (On-Going). (January 2023 - 2026).

Alzheimer's disease is a prevalent form of dementia that mainly affects the elderly population, costing American taxpayers a whopping \$250 billion annually. The clinical symptoms of AD have been linked to gene variants for the serotonin/5-hydroxytryptamine receptor 2A (5HT2A). This receptor, which is a G protein-coupled receptor (GPCR), is also associated with breast cancer progression, which disproportionately affects African American women in the United States. Despite computational methods being challenged with predicting the polypharmacological action of agents, a missense mutation at single nucleotide polymorphism (SNP) rs6304 in the 5HT2A receptor has been found to destabilize the protein. This destabilization can be critical as it can potentially alter the receptor's collective allosteric behaviors, which are essential for proper function. A homology model of the 5HT2A receptor was created, and 182 known 5HT2A ligands were docked to the receptor, which has bearing on calculating long-range, quantum electronic, many-body dispersion (MBD) correlations in the whole complex. By predicting serotonin receptor response and its variants based on whole-system interactions, there is potential for numerous clinical breakthroughs in neurodegeneration, cancer, and addiction science.

"Genetic Polymorphisms in IL-10 Promoter Are Associated with Prostate Cancer Risk in African Americans". (2019).

Even though prostate cancer (PCa) has excellent survival rates due to early screening, there is a discrepancy in the risk of developing PCa among ethnic groups. Specifically, the prevalence and morbidity rates are higher in African-American men than in most other populations. Recent studies have suggested that polymorphisms in immune response genes seem to affect the susceptibility or severity of various diseases including cancers. In particular, variation in Interleukin 10 (IL-10) has been associated with PCa risk. Therefore, this study investigated the association of genetic variation in the IL-10 promoter (represented by rs12122923, rs1800871, rs10494879 and rs1800893) with clinical features such as Gleason score and the possible effects of tobacco smoking on these polymorphisms using a nested case-control study involving African American males. Multiple and binary logistic regression models were applied to analyze the clinical and genotypic data. Results showed rs12122923 and rs180

"Molecular Design, Synthesis and Biological Studies of Small Organic Molecule for Curing Chagas Disease." (Complete). (2013 - 2016).

Molecular Design, Synthesis and Biological Studies of Small Organic Molecule for Curing Chagas Disease.

Teaching Experience

INDI 102, Unit II Molecules and Cells, 6 courses.

MICR 228, Research in Microbiology, 3 courses.

MICR 418, Special Topics, 1 course.

MICR 600, Dissertation Research, 1 course.

Directed Student Learning

- Dissertation Committee Chair, "A global function of *sroA* in *Staphylococcus aureus*." (March 15, 2023 - Present).
Advised: Jamila Alsulami
- Dissertation Committee Member, "APOE influence on the interplay between gut microbiota, biomarkers of brain health, and adaptations induced by diet and exercise." (February 12, 2023 - Present).
Advised: Shantol Graham-Hyatt
- Doctoral Advisory Committee Member, "Studies on the involvement of stress in *Schistosoma mansoni* and *Biomphalaria glabrata* relationship and the effect of stress-inhibitor drugs on the host-pathogen interaction." (August 2018 - April 2024).
Advised: Oumsalama Elhelu
- Doctoral Advisory Committee Member, "The Role of HIV-1 Nef in Reduced Migration of Macrophages in the Lung of HIV-Transgenic Mice." (April 15, 2015 - June 30, 2022).
Advised: Yousef Alrajhi
- Doctoral Advisory Committee Member, "Regulation and function of the i6A37 tRNA modification." (August 2015 - April 2022).
Advised: Joseph Aubee
- Doctoral Advisory Committee Chair, "Staphylococcus aureus SigS Induces Expression of Two Novel Short Proteins That Modulate Its mRNA Stability." (August 15, 2016 - April 8, 2021).
Advised: Amer Al Ali
- Major advisor for doctoral dissertation, "Vitamin D Receptor Polymorphisms and Vitamin D-Associated miRNAs in the Development of Breast Cancer in African American Women." (2016 - 2020).
Advised: Abrar Aloufi
- Major advisor for doctoral dissertation, "Genetic and Epigenetic Associations of Serotonin Receptor 7 (HTR7) with Breast Cancer in African American Women." (2015 - 2020).
Advised: Afnan Shakoori
- Major advisor for doctoral dissertation, "GENETIC VARIATION IN 5-HT2A IS ASSOCIATED WITH STRESS AND IMMUNE RESPONSE BIOMARKERS IN AFRICAN AMERICAN YOUNG ADULTS." (2015 - 2020).
Advised: Areej Alyahyawi
- Major advisor for doctoral dissertation, "Association of Genetic Variation in the Serotonin Receptor 2A with Breast Cancer in African American Women." (2015 - 2020).
Advised: Nicole Retland
- Doctoral Advisory Committee Member, "CpxR Regulation of Antisense RNAs and Novel Small Proteins with Toxicity Towards Host Cells in *Yersinia pseudotuberculosis*." (August 15, 2014 - November 30, 2020).
Advised: Mohammed Abdulrahman Asiri
- Doctoral Advisory Committee Member, "Calcium channels: Potential new therapeutic targets for hormone-independent and resistant breast cancers. Genetics and Molecular Genetics Department." (2014 - 2019).
Advised: Zeina Al-Sharawi

Doctoral Advisory Committee Member, "Regulation of Asthmatic Airway Inflammation by Vitamin D in Inner-City Youth." (2014 - 2018).

Advised: Douglas Mansell

Major advisor for doctoral dissertation, "Genetics and Epigenetics of HPV-Infected Anal Cancer." (2014 - 2017).

Advised: Aliza Ibad

Major advisor for doctoral dissertation, "Genetic variation in serotonin type 7 receptor (5-HT7) gene and its association with C-reactive protein (CRP) levels in African-Americans." (2012 - 2017).

Advised: Grace Swanson

Doctoral Advisory Committee Chair, "Immunoregulation of Eosinophil Growth, Migration and 3-Dimensional Tumor Spheroid-Invasion by Charcot-Leyden Crystal Protein." (June 2008 - April 15, 2016).

Advised: Christine Clarke

Dissertation Committee Member, "Investigating the phenotypic and clinical features associated with the presence or absence of BRCA1 gene mutations in breast cancer patients." (2013 - 2015).

Advised: Ashley Queen

Doctoral Advisory Committee Member, "An Analysis of the Vitamin D Binding Protein Gene Variants, and Associated Risks for Prostate Cancer Among African American Men." (2009 - 2014).

Advised: Kimberly Mason

Major advisor for master's thesis, "DNA Variation in Foxp3 and DRD2 and Its Association with C-Reactive Protein. Biology department." (2012 - 2013).

Advised: Kimberly Miller

Mentoring

Danae Byer, (Other). Approx. 20 hours. June 12, 2021 - June 30, 2023.

Rachel Blake (Other). Approx. 20 hours. January 12, 2022 - July 30, 2022.

Nina Nwade (Other). Approx. 20 hours. January 12, 2022 - June 30, 2022.

Non-Credit Instruction Taught

Credit Instruction 231-300. Biology of Pathogens I, Graduate Students, College of Medicine, 6 participants. (2010 - 2023).

Credit instruction 231-307. Virology, Graduate Students, College of Medicine, 5 participants. (2010 - 2023).

Credit Instruction, 16172-DENT. Dental Microbiology For Dental Students, College of Dentistry., 80 participants. (2010 - 2023).

Credit nstruction: 231-304. Cell and Molecular Immunology, Graduate Students, College of Medicine., 6 participants. (2009 - 2023).

Credit instruction 231-228. Research in Microbiology, Graduate Students, College of Medicine., 7 participants. (2013 - June 2023).

Credit Instruction-231-303 Biology of Pathogens II, 5 participants. (2015 - March 2023).

Credit Instruction 231-300. Biology of Pathogens I, Graduate Students, College of Medicine., 5 participants. (2010 - 2022).

Credit instruction-231-418. Special topics in Microbiology, 5 participants. (2015 - 2020).

Teaching Innovation and Curriculum Development

Revise Existing Course. Molecules and Cells Unit II. February 15, 2022 - June 30, 2022.
Review the NBME Content Outline

Revise Existing Course. Molecules & Cells II. April 2020 - September 2021.
Added lectures on Microbiome and Immune response to the course.

Faculty Development Activities Attended

Conference Attendance, "14TH Annual Faculty Retreat," HU College Of Medicine, WASHINGTON, DC. (May 25, 2023).

Conference Attendance, "Quantum Biology Gordon Research Conference," Gordon Research Conference, Galveston, TX, United States. (March 19, 2023 - March 23, 2023).

Conference Attendance, "COM 13th Annual Faculty Retreat," College of Medicine. (May 19, 2022).

Seminar, "Demystifying the Library Databases," Washington, DC. (March 2019).

Seminar, "Human Anatomy Table Workshop," Washington, DC. (March 2019).

Research Related Conference/Seminar, "Implementing the Revised Common Rule for IRB program operations," Wahington, DC. (February 2019).

Continuing Education Program, "HU College of Medicine 2018 Faculty Development Annual retreat/AAMC," Washington, DC. (May 2018).

Research Related Conference/Seminar, "Writing the Specific Aims Section for a NIH Grant.," Washington, DC. (February 2018).

Research Related Conference/Seminar, "American Physiological Society, Physiological and Pathophysiological Consequences of Sickle Cell Disease," Washington, DC. (November 2017).

Seminar, "University of Kentucky and Howard University Office of the Provost & Chief Academic Officer, Grant writing workshop," Lexington, KY. (June 2017).

Conference Attendance, "College of Medicine - Faculty Development: Faculty Retreat," Howard University, College of Medicine, washongton, DC. (May 2017).

Seminar, "RCMI Georgetown Grant writing workshop," Washington, DC. (April 2017).

Conference Attendance, "XULA-COP 10th Health Disparities Conference," XULA-COP, New Orleans, LA. (March 2017).

Workshop, "Characterization of Leishmania by Polymerase Chain Reaction," WHO, Istanbul, Turkey. (2015).

Workshop, "Leishmania Typing using Monoclonal antibodies and excreted factors," WHO, Casablanca, Morocco. (2015).

Workshop, "GTI's QuickScreen, B Screen, QID, and C2ID ELISA assays," The American Board of Histocompatibility and Immunogenetics (ABHI). GTI, Inc, Washington, DC, United States. (2006).

Workshop, "HLA SSO Typing and LifeMatch HLA antibody screening," TEPNEL Lifecodes, Washington, DC, United States. (2006).

Conference Attendance, "DNA yield from buccal swabs and its utilization in HLA typing using Luminex SSO bead technology," 32nd Annual Meeting of the American Society for Histocompatibility and Immunogenetics (ASHI), San Deigo, CA, United States. (2004).

Workshop, "Micro SSP Primer Recognition Sites, Sequence-Specific Primer Amplification, and PCR Troubleshooting," One Lambda, Inc, Washington, DC, United States. (2002).

Workshop, "HLA typing Using PCR Technology," One Lambda Inc, Abha, Saudi Arabia. (2001).

University Service

Postdoctoral Grant application reviewer, HOWARD UNIVERSITY AMERICAN CANCER SOCIETY DIVERSITY IN CANCER RESEARCH GRANTS. (February 19, 2023 - 2030).

Admission Committee Member, Graduate School. (March 9, 2014 - 2030).

Committee Member, Student Grievance Committee. (January 2023 - 2025).

Committee member, Biomedical Sciences Graduate Program. (August 9, 2022 - 2025).

Committee Member, APT. (July 1, 2019 - December 30, 2023).

Member/Course coordinator CMII, Members of the Curriculum Subcommittee. (January 17, 2018 - December 30, 2023).

Candidates Interviewer, College of Medicine ADMISSIONS COMMITTEE. (October 11, 2017 - December 30, 2022).

Committee member and Judge, Research Symposium Week, Howard University. (February 2, 2012 - December 30, 2022).

Junior Faculty Interviewee, Junior faculty member in the LCME accreditation. (May 10, 2017 - June 14, 2017).