Tina L. Brower-Thomas, PhD

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Email:Tina.browerthomas@Howard.edu
TinalbThomas@gmail.com

Howard University Interdisciplinary Science Building
2201 Georgia Avenue NW Suite 221C
Washington, District of Columbia 20059

Education:

New York University Tandon School of Engineering
Brooklyn, NY, Department of Chemical and Biological Sciences
Ph.D. Materials Chemistry, Research Advisor: Professor Abraham Ulman

New York University Tandon School of Engineering, Brooklyn, NY,
Department of Chemical and Biological Sciences
M.S. Chemistry, Research Advisors: Professors Kalle Levon and Abraham Ulman

Howard University, Washington, District of Columbia, School of Arts and Sciences
B.S. Chemistry

Analytical and Scientific Expertise: Molecular self-assembly, molecular electronics, chemical vapor deposition, surface modification, molecular intercalation of 2Dmaterials, scanning probe microscopy, Fourier Transform infrared spectroscopy, X-ray photoelectron spectroscopy, Auger spectroscopy, fluorescence spectroscopy, cyclic voltammetry

Publications:

(1) **Key Concepts for Future Quantum Information Science Learners,** https://qis-learners.research.illinois.edu, May 13, 2020
(2) **Heterointerface effects in the electrointercalation of van der Waals heterostructures,** D.K. Bediako, M. Rezaee, S.Y.F. Zhao, T. Taniguchi, K. Watanabe, T.L. Brower-Thomas and P. Kim**, Nature, June 20, 2018**, Vol 558, 425-429
(3) **Photocurrent in Bismuth Junctions with Graphene**, T.E. Huber, T. Brower, S.D. Johnson, J.H. Belk, J.H. Hunt (Submitted). arXiv:1709.05408,Cond-mat.met. September 15, 2017.
(4) **Graphene-based Metasurfaces for Multimode Tunable Terahertz Modulators,** T.A. Searles, M. Rezaee, A. Shams-Ansari, E. Strickland, T. Brower-Thomas, G. Harris, R. Yahiaoui, in Conference on Lasers and Electro-Optics, OSA Technical Digest (online) (Optical Society of America, 2017), paper JW2A.105. DOI: 10.1364/CLEO_AT.2017.JW2A.105.
(5) **Imaging of Quantum Materials**, F. von Cube, E. Kalfon-Cohen, Y. Ivry, A. Knöller, T. Webb, D. Huang, J. Hoffman, T. Brower-Thomas, D.C. Bell, **Microscopy and Microanalysis September 2015** Vol. 21, 1325-1326
(6) **Fabrication of Bismuth Telluride Wire Thermoelectric Devices,** T. E. Huber, S. Johnson, K.A. Shirvani, Q. Barclif, T. L. Brower , A. Nikolaeva and L. Konopko, **Proceedings, 3rd International Conference on Nanotechnologies and Biomedical Engineering September 23-26, 2015**, Chisinau, Republic of Moldova
(7) **Photoresponse in Arrays of Thermoelectric Nanowire Junctions",** T. E. Huber, R. Scott, S. Johnson, T. L. Brower , J. H. Belk, and J. H. Hunt, **Applied Physics Letters, August, 2013,**Vol.103, Issue 4, **041114-1-4**
(8) **SPR Studies of the Adsorption of Silver/Bovine Serum Albumin Nanoparticles (Ag/BSA NPs) onto the Model Biological Substrates** C. Bhan, T. L. Brower, and D. Raghavan. **Journal of Colloid and Interface Science, July 2013,**Vol. 402, 40-49
(9) **Chemical Etching of Nanocomposite Metal-Semiconductor Films Monitored by Raman Spectroscopy and Surface Probe Microscopy,** Perry, C.C.; Brower, T.L.; Zhang, C; Waddell, E.; Bates, C.W., Jr.; Mitchell J. W., ***Proc. of SPIE*, March 2008** Vol. 6891 689116-**7**
(10) **An Engineered Virus as a Scaffold for Three-Dimensional Self-assembly on the Nanoscale** Blum,A.S.; Soto, C. M.; Wilson, C.D.; Brower, T.L.; Pollack, S.K.; Schull, T.L.; Chatterji, A.; Lin, T.; Johnson, J.E.; Amsinck, C.; Franzon, P.; Shashidhar, R.; Ratna, B.R., ***Small,* July 2005** 1(7): 702-706.

Publications Continued:

(11) **Mixed Self-assembled Multilayer of 4,4'-dimercaptobiphenyl and 1,8-Ocatanedithiol,** Brower, T. L.; Cook, M.; Ulman, A., ***Journal of Physical Chemistry B,*** **Oct 2003** 107 (42): 11721-11725.
(12) **Self-Assembled Multilayers of 4,4'-Dimercaptobiphenyl Formed by Cu (II) Oxidation**, T.L. Brower, Liu, G.-Y.; Yan, C.; Golzhauser, A.; Grunze, M., ***Langmuir*****, July 13, 2002**, 18, 6207-6216.

Presentations:

(1) **Center for Integrated Quantum Materials Education and Outreach Execution"**, Tina L Brower-Thomas, NSF Science and Technology Center Site Visit, Virtual Meeting, May 6, 2020
(2) **New York University 9th Annual Women in STEM Summit, Keynote Speaker and Awardee** "*Reflecting on our Past, Transforming Our Future*" March 5th, 2020" New York Univeristy Tandon School of Engineering.
(3) **Center for Quantum Networks Diversity and Culture of Inclusion,** Stephanie Hurst, CQN DCI Diretor, Tina Brower-Thomas CQN DCI Co-Director, National Science Foundation Science Engineering Research Center, Site Visit Panel, October 28, 2019, University of Arizona, Tucson Arizona
(4) Invited talk, "**Building Community in NSF Centers"** Broadening Participation Workshop for New Investigators September 9, 2019, Alexandria, VA
(5) **Podcast, Stories from the National Nanotechnology Initiative 15 Year Special Addition,** "*Increasing STEM Awareness:Conversation with Tina Brower-Thomas*", July 22, 2019, https://www.youtube.com/watch?v=8G1T7UGNo58
(6) **Marine Corps Systems Command 9th Annual MCSC Quantico Summer STEM Camp**, Guest Speaker, June 27, 2019, Marine Corps Base, Quantico, VA, https://www.whs.mil/News/News-Display/Article/1901558/mcsc-stem-camp-fosters-comradery-creativity-among-teens/
(7) **Center for Integrated Quantum Materials Education and Outreach Execution"**, Tina L Brower-Thomas, NSF Science and Technology Center Site Visit, May 8, 2019, MIT, Cambridge, MA
(8) **Center for Integrated Quantum Materials Education and Outreach Execution"**, Tina L Brower-Thomas, NSF Science and Technology Center Site Visit, May 8, 2018, Harvard University, Cambridge, MA
(9) **Missile Defense Agency,"Take Your Child to Work Day"**, Guest Speaker, April 26, 2018 Fort Belvoir, VA
(10) **Decoration of Graphene Grown Using Hot Filament Chemical Deposition**, Tina Brower-Thomas, American Physical Society Conference, Las Angeles, CA, March 8, 2018
(11) **Graphene-based Metasurfaces for Multimode Tunable Terahertz Modulators"**, Conference on Laser Electro-Optics, San Jose, CA, May 14-19, 2017
(12) **Center for Integrated Quantum Materials Education and Outreach Execution"**, NSF Science and Technology Center Renewal presentation, May 2017
(13) **Decoration of Graphene With Transition Metals,** Tina L Brower, Mehide Razee, Harvard University Material Science and Devices Seminar, Harvard University, Cambridge, MA December 1, 2016
(14) **Center for Integrated Quantum Materials Education and Outreach Execution,** Tina L Brower, Carol Lynn Alpert, National Science Foundation Science and Technology Center Site Visit Panel, Howard University, Washignton, DC April 19, 2016
(15) **Center for Integrated Quantum Materials Education and Outreach Execution,** Tina L Brower, Kathyrn Hollar, National Science Foundation Science and Technology Center Site Visit Panel, Harvard University, Cambridge, MA April 2, 2015
(16) **Photoresponse and Light Trapping in Nanowire Array-Graphene Interfaces,** T . E. Huber, R. Scott, S. Johnson, Q. Barclift, T. L. Brower , J. H. Hunt **and** J. H. Belk**.** The American Physical Society **March 15, 2015**
(17) **Center for Integrated Quantum Materials Education and Outreach Plans and Execution,** Tina L Brower, Kathyrn Hollar, National Science Foundation Science and Technology Center, Site Visit Panel, Washignton, DC May 4, 2014

(18) **Using Allotropes of Carbon to Teach Nanoscale Imaging and Analysis Techniques,** T.L. Brower**,** Engineering Science 111, Harvard University, **April 2014**.

(19) **Hot Filament Chemical Vapor Deposition as a Method of Growth of Uniform Thin Films of Graphene,** T. L. Brower, G. L. Harris, C. Taylor, R.D. Vispute, and C. M. Hosten*, International Conference on Nanoscience and Technology, ChinaNano2013*, Beijing China, **September 2013**.

(20) **Cyclic Voltammetry of Self-Assembled Hg (II) Generated 4,4'-Dimercaptobiphenyl Multilayers,** T.L. Brower, Briana James, *Pittsburg Conference*, Philadelphia, PA, **March 2013.**

(21) **Proposal Center for Integrated Quantum Materials Education and Outreach,** Tina L Brower, Kathyrn Hollar, Carol Lynn Alpert, National Science Foundation Science and Technology Center Site Visit Panel, Harvard University, Cambridge, MA February 6, 2013

(22) **Hot Filament Chemical Vapor Deposition as a Method of Growth of Uniform Thin Films of Graphene,** T. L. Brower, G. L. Harris, C. Taylor, R.D. Vispute, and C. M. Hosten *by invitation*, Tohoku-Harvard Joint Workshop. New Directions in Materials for Nanoelectronics, Spintronics and Photonics. 10th RIEC International Workshop on Spintronics, Tohoku University, Sendai Japan, **January 2013.**

(23) **Mixed Multilayers of Aromatic and Aliphatic Dithiols,** Brower, T.L., NOBCChE, Washington, District of Columbia **September 2012.**

(24) **Bottom Up Approaches to Nanotechnology and Research Facilities at Howard University,** *by Invitation***,** Brower, T.L. Louisiana State University, Baton Rouge, LA **May 2012.**

(25) **Utilizing Research to Integrate Nanoscience into the Chemistry Curriculum,** Brower, T.L., South Eastern Regional Meeting of the American Chemical Society, Richmond Virginia, **October 2011.**

(26) **Nanofabrication of Self-Assembled Monolayers Using Automated Scanning Probe Lithography,** Samanthi Thabrew De Silva, Tina L Brower-Thomas, Jayne C. Garno, Zorabel, LeJeune, Jing-jiang, Yu**,** Society for Applied Spectroscopy Poster Session, Pittcon, Orlando, Florida, **February 2010.**

(27) **Methods to Control the Nanoscale Etching of Silver Silicon Nanocomposites for Surface Modification and Application in Detection Systems**, Brower, T.L., Zhang, C., ACS National Meeting, Washington, District of Columbia, **August 2009.**

(28) **Chemical Etching of Nanocomposite Metal-Semiconductor Films Monitored by Raman Spectroscopy and Surface Probe Microscopy,** Perry, C., Brower, T.L.; Zhang, C.; Waddell, E.; Bates, C.W., Jr.; Mitchell J.W., SPIE Photonics West, San Jose, CA **January 2008.**

(29) **Self-Assembled Multilayers of 4,4'-Dimercaptobiphenyl Formed by Cu(II)-Catalyzed Oxidation,** Brower, T. L.; Garno, J. C.; Ulman, A.; Liu, G.-Y.; Yan, C.; Golzhauser, A.; Grunze, Howard University Nanotechnology symposium, Washington, DC **November 2007**.

(30) **Self-Assembled Multilayers of 4,4'-Dimercaptobiphenyl Formed by Cu(II)-Catalyzed Oxidation,** Brower, T.L.; Garno, J. C.; Ulman, A.; Liu, G.-Y.; Yan, C.; Golzhauser, A.; Grunze, Southwest Regional Meeting, Lubbock, TX. **November, 2007.**

(31) **Self-Assembly of Molecular Circuits on a Nanoscale Virus Scaffold**, Blum, A.S., et al 3rd Conference on Foundations of Nanoscience, Self-Assembled Architectures and Devices, Snowbird, Utah, **April 2006.**

(32) **Synthesis and Characterization of Self-Assembled Multilayers of 4,4'-Dimercaptobiphenyl,** Brower,T.L.*by Invitation* Center for Biomolecular Science and Engineering, The Naval Research Laboratory, Washington, District of Columbia, **February 2002.**

(33) **An American Student's Experience in Germany**: **From the Scientific and Social Perspective**, Brower, T.L.; *by Invitation* Biofunctional Systems and Polymers at Interfaces, 4th Annual University and Industry Workshop, Munich Germany, **June 2001.**

(34) **AFM as a Tool for the Visualization of Surface Morphology in the Layer-by-Layer Study of Self-Assembled Multilayers of Aromatic Dithiols**, Brower, T.L.; Garno, J.C.; Liu, G.-Y.; Ulman, A. Third Annual Neutron Scattering University-Industry Workshop, Structure of Neutrons in Nanocomposite Materials and Neutron Applications, Taejon, Korea, **February 2000**.

Publications Continued

(35) **Kinetic Study of the Formation of Multilayers of DMBP**, *by Invitation,* Brower,T.L.; Ulman, A.; Yan, C.; Gölzhäuser, A.; Grunze, M.; Combined University of Twente and Max-Planck Institut für Polymerforschung Conference on Advances in Surface Chemistry Research, Mainz, Germany, **October 1998**.

Conference Chair:

(1) 2019 National Science Foundation Nanoscale Science and Engineering Grantees Conference, Progress in Foundational Nanotechnology and Infrastructure, Dec 9-10, 2019, Alexandria, VA, Conference CoChair, MC and session moderator, Artificial Intelligence and nanoscale simulations and design, Nanomachines, Conference Organizer, http://www.nseresearch.org/2019/program.htm

(2) 2018 National Science Foundation Nanoscale Science and Engineering Grantees Conference, Progress in Foundational Nanotechnology and Infrastructure, December 6-7, 2018, Alexandria, VA- conference Cochair, MC and session moderator, Quantum Information Science and Technology ,Co-Chair http://www.nseresearch.org/2018/program.htm

Panelist and Inivited Conference Symposium Participant:

(1) Panelist-Keynote. Joint School of Nanoscience and Nanoengineering (JSNN) Roundtable webinar on The Impact of Industry 4.0 on Academia, Industry, and Society, October 9, 2020
(2) IBM Researh, "How to Build A Quantum Workforce Panel, July 30, 2020. https://www.google.com/search?client=safari&rls=en&q=how+to+build+a+quantum+workforce+panel&ie=UTF-8&oe=UTF-8
(3) "Key Concepts for Future Quantum Information Science Learners" Meeting, Invited by the Interagency Working Group, Workforce, Industry and Infrastructure, National Science Technology, Subcommittee on Quantum Information Science, Office of Science and Technology Policy, Department of the United States governemt, Executive Office of the President, Virtual Meeting, March 20, 23 and 26th 2020 https://www.nsf.gov/news/special_reports/announcements/051820.jsp
(4) Kavli Futured Symposium: "Achieving a Quantum Smart Workforce", November, 4-5th, 2019, University of California Luskin Conference Center, Los Angeles, CA
(5) Panelist,"**WE STEM: Hidden Figures No More"**, The PowHERful Foundation Enrichment Conference Series, April, 28, 2018, U.S. Chamber of Commerce, Washington, DC
(6) Panelist- Moderator Dr. Shirley Malcom "**A Seat at the Table: Integrating MSIs into the STCs**" Tina L Brower-Thomas, Maribel Vazquez, Judi Brown-Clarke, Patty Ordonez and Lizanne DeStefano NSF Science and Technology Directors Meeting, Arlington, VA August 30, 2017

Faculty Appointments and Professional Experience:

Research Assistant Professor/WOC 7/2018-present
Howard University Gradaute School

Visiting Scholar/WOC 1/2017-present
Harvard John A. Paulson School of Engineering and Applied Science

Co-design Center for Quantum Advantage 9/2020-present
Materials Research Ivestigator

Develop and implement new appraoches for the advancement of the role of 2Dimensional Materials in quantum information science technology.

Diversity and Inclusion Co-Director
Quantum Devices, Materials and Fundamentals Thurst Investigator 9/2020-present
Center for Quantum Networks

Lead the development, implementation, management and assessment of the strategic plans for diversity and inclusion for the National Science Foindation funded Engineering Research Center, Center for Quantum Networks. The Center includes the University of Arizona, MIT, Harvard, Yale, Northern Arizona University, University of Massachusetts Amherst, Howard University, Univeristy of Oregon, Brigham Young Univeristy and The University of Chicago. Key targets include the recruitment and retention of diverse faculty staff, postdocs and students that exceed the national engineering average levels. The role impacts budget decisions and management, requires interations with center director, research thrust leads, industry, stake holders and engineering work force development personnel. Day to day includes developing/providing strategic trainings, center communications, curriculum development, community engagement, knoweldege dissemination, assessment design and executive board participation. Research in the Center's quantum devices, materials and fundamentals thrustmaterail growth for quantum network.

CoPI, Howard University 3/2019-present
Executive Director, Howard University 3/2017-present
Educational Director 9/2013-present
Center for Integrated Quantum Materials (CIQM)

Manage Howard University allocation (750K/year) and educational and outreach (400K/year) programs for National Science Foundation funded Science and Technology Center, Center for Integrated Quantum Materials (CIQM). Direct educational and outreach activities between universities (Harvard and MIT), The Museum of Science Boston and the six college network schools in the Boston (Bunker Hill Community College, Olin College, Mt. Holyoke, and Wellesley College) and Washington, DC (Gallaudet University and Prince George's Community College) areas. Develop and implement programming for Center postdocs, graduate students and undergraduate students related to Center goals. Key targets include increase the number of Center participants that are underrepresented in STEM, and increase scientific collaborations between Harvard, Howard and MIT. Coordinate research collaborations between both the Center's Universities and between the Center's Universities and College Network schools. Recruit and retain students in STEM for academia and industry. Coordinate center assessement. Promote center community. Develop CIQM related curriculum for broad distribution. Develop educational demos for public outreach. Organize and coordinate outreach activities in Washington and Boston areas. Manage Center branding through public engagement and media development. Write proposals and Center supplements. Lead NSF reporting for education outreach and diversity. Manage three collaborative research research projects. COVID-19 response.

Assistant Director for the Integration of Research and Education
9/2009-1/2013
Howard University Program for the Expansion of Research and Education in Nanotechnology (HUPEREN)
Howard University, Washington, DC

Work with research faculty in the HUPEREN to modernize the curriculum by transforming leading-edge research results in to modern laboratory courses for infusion into the Howard University graduate and undergraduate curricula. Designed nanotechnology based educational modules. Integrated research into nanomaterials courses in the department of chemical engineering.

Senior Research Associate 2/2007- 7/2009
CREST Center for Nanomaterial Characterization Science and Processing Technology
Howard University, Washington, DC

Pursued a broad range of research interest that utilize molecular self-assembly and advance techniques in surface analytical chemistry. Specific interest included the investigation of the biocidal properties of silver nanopartilces; methods to improve adhesion of biological systems to surfaces; methods to control the nanoscale etching of silver silicon nano-composites.

Senior Engineer/Scientist, Schafer Corporation, Arlington, VA 11/2004- 05//2006
Department of Homeland Security/S&T/HSARPA/CBRNE
Security Clearance-Secret

Lead System Engineering and Technical Analysis Contractor (SETA) for three Small Business Innovative Research Contracts (SBIRs) and a program that included three awardees and a multimillion dollar budget. Worked for two program managers on a team of three SETAs to provide technical expertise to government program managers who were responsible for three SBIRs, three chemical detection system programs and one program for testing and evaluation of technologies. Provided analysis of current and developing chemical detection system technologies. Provided technical and programmatic direction to contract awardees to achieve best value to the government. Educated program managers on emerging technologies and advised them on the selection of technologies for the execution of the Department of Homeland Security missions. Reviewed proposals to determine the relevance of the technology proposed and evaluated the ability of the technology to meet the requirements of the program. Prepared and successfully delivered along with the program manager, a down select brief to the Assistant Deputy Director and the Deputy Director of the office.

Professional Experience continued:

Senior Engineer/Scientist, Schafer Corporation, Arlington, VA, continued 11/2004- 05//2006
Defense Advanced Research Projects Agency (DARPA) –Lead SETA

Supported DARPA Special Projects Office (DARPA/SPO) on program development relating to biological detection and design of bio agent trigger systems. Prepared technical presentations including a down select brief to the office director. Oversaw testing and evaluation of detection systems. Educated program manager on advances in the technology used and the history of the technologies used for problem solving as it pertained to the mission of the program. Planned several kickoff meetings and quarterly reviews.

NRC Postdoctoral Research Associate, Surface and Microanalysis Sciences Division 04/2002- 08/2004
Center for Biomolecular Science and Engineering – Naval Research Laboratory, Washington, DC

Acted as technical liaison between biomolecular team and architecture and design team in a multi-disciplinary, multi-institutional program to develop a first generation virus based functional molecular electronic device with potential use as ultra dense circuits for revolutionary war fighting sensors and information systems capabilities. Conceptualized and implemented wet lab procedures that exploited the inherent properties of the virus for meeting the design goal efforts of one bit per virus. Given the size of the virus this translates to 1 petabit/cm^2 and 10^6 more dense than CMOS circa 2002. Formulated and prepared nano device test structures for characterization by scanning tunneling microscope. Developed methods to attach molecular circuit elements to genetically mutated and gold decorated virus. Utilized advanced spectroscopic techniques to verify the attachment of molecular circuit elements to virus. Developed methods to self-assemble and immobilize virus on various surfaces. Imaged virae and 2d-assembly of virus by atomic force microscopy. Utilized soft lithography methods and employed surface potential microscopy to characterize molecular wires. http://en.wikipedia.org/wiki/Cowpea_mosaic_virus

Graduate Research Assistant, New York University, 09/1998-02/2002
Tandon School of Engineering, Brooklyn, NY

Engineered multilayers of molecular wires using coordination chemistry for application in molecular scale electronic devices such as molecular recognition based chemical sensors. Prepared substrates by thermal evaporation of metals onto various surfaces. Prepared organic thin films on Au (111) substrates by molecular self-assembly. Synthesized oligio(phenylene ethylene) dithiols and characterized them by NMR and FTIR. Characterized thin films by ER-FTIR, XPS, SPR, and SPM. Supervised two undergraduate students. Performed research internationally and domestically including: ***Angewandte Physikalische Chemie, Ruprecht-Karls-Universität, Heidelberg, Germany*** (Professor M. Grunze) ***Max-Planck Institut für Polymerforschung Research, Mainz, Germany*** (Professor Wolfgang Knoll) ***Wayne State University, Detroit, MI*** (Professor Gang-yu Liu) ***University of Texas, Austin, TX*** (Professor A.J. Bard)

Graduate Research Assistant, New York University, 09/1996-02/1998
Tandon School of Engineering, Brooklyn, NY

Synthesized and characterized a variety of conducting polymers to support fundamental research. Manipulated and analyzed structural features of conductive polymers to ascertain effects on conductivity. Developed chemical dopant methods and utilized UV spectroscopy to follow Pi-Pi transitions as a function of dopant concentration. Employed UV to examine band shifts associated with polymer conductivity

Undergraduate Research Assistant, Howard University 06/1994-08/1995
Department of Chemistry Washington, DC

Assisted in the development of environmentally friendly methods for the synthesis of polydimethylsiloxane. Synthesized cyclic carbonates from epoxides via reaction with carbon dioxide. Functionalized polydimethylsiloxanes through hydrosilation. Determined molecular weight of siloxane polymers via vapor phase osomometry and NMR.

Teaching Experience:

Adjunct Faculty, Howard University, Washington, DC 01/2009-2014

Frontiers in nanoscience and nanotechnology (CHEG 417)
Nanomaterials (CHEG 430 undergraduate CHEG 610 graduate)

Adjunct Faculty, Montgomery College, Takoma Park, MD 01/2009-12/2011

General Chemistry lecture
Introduction to Chemistry lecture and lab

Instructor, Youth in Engineering and Sciences Center, NYU-polytechnic 06/1996-04/2000

Laboratory Safety

Instructor, Benjamin Banneker Academy High School, Brooklyn, NY 04/2000-06/2000

Regents exam prep for physical sciences and math

Senior Laboratory TA, New York University, 09/1999-04/2000
Tandon School of Engineering, Brooklyn, NY

General Chemistry lab teaching assistant

Senior Laboratory TA, New York University, 09/1996-04/1997
Tandon School of Enginering, Brooklyn, NY

Organic Chemistry lab teaching assistant

Awards and Fellowships:

Women in STEM Champion Award –"For Cutting Edge Research Education and Outreach"	2020
HU Advance It Mini-grant	2012
NRC Post-Doctoral Fellowship, Naval Research Laboratory Washington, DC	2002–2004
NSF Foundation Fellow MRSEC Center for Polymers at Engineered Surfaces	
NYU-Polytechnic School of Engineering, Brooklyn, NY	1998-2002
General Electric Minority Fellowship	1995-1997
Arts and Sciences Dean Scholarship	1993
Maryland State Senatorial Scholarship	1990

Patent:

Virus as a Scaffold for Hierarchical Self-assembly of Functional Nanoscale Devices, Patent 8019555, **September 13, 2011.**

Professional Services:
NSF Review Panel September 2020
NSF Review Panel October 2020
NSF Ad hoc Reviewer October 2020

Professional Affiliations:

American Physical Society (2017-present)
American Chemical Society (1998-present)
Association for Women in Science
Delta Sigma Theta Sorority Inc.
Junior League of Washington
Project STEM, Board Member
Robert and Mary Church Terrell House
and LeDroit Park Museum and Cultural Center, Trustee

Additional Experience:

US Patent and Trademark Office –Guest Lecturer Nanotechnology -September 2008
Lucent Global Science Scholars Program Regional Selection Panel -2003 and 2004
National Association for the Advancement of Colored People ACT-SO Competition, Judge Physical Sciences, New York Region-1998 and 1999

Professional Development *(seminars, courses, meetings, and workshops attended)*:

Frontiers in Quantum Materials & Devices Workshop	San Sebastian, Spain University of the Basque Country	July 12-14, 2017
Tohoku-Harvard Joint Workshop, New Directions in Materials for Nanoelectronics, Spintronics and Photoonics" 10th Annual RIEC Workshop on Spintronics.	Tohoku University Sendai, Japan	January15-16, 2013

Professional Development *(seminars, courses, meetings, and workshops attended) continued*:

Fifth Annual Focus Ion Bean User Group	Carneigie Institute of Washington, Washington, DC	February 2012
Preparing Future Faculty (PFF) Summer Institure	Howard University, Washington, DC	June 8-11, 2011
Quantitative X-ray Microanalysis of Bulk Specimens and Particles	Lehigh University	June 18-22, 2001

References: Available upon request