Pumtiwitt C. McCarthy, Ph.D.
Morgan State University
1700 East Cold Spring Lane
Baltimore, MD 21251
Pumtiwitt.McCarthy@morgan.edu

EDUCATION

2009 **Ph.D., Biochemistry**. University of Delaware, Newark, DE
Dissertation Advisor: Colin Thorpe, Ph.D. Dissertation Title: Oxidative Protein Folding *in vitro*: Studies of the Cooperation of Quiescin Sulfhydryl Oxidase with Protein Disulfide Isomerase and Explorations of the Substrate Specificity of the Oxidase

2003 **B.S., Biochemistry**, *cum laude*. Rowan University, Glassboro, NJ
Research advisor: Catherine Yang, Ph.D.

PROFESSIONAL EMPLOYMENT

2019-present **Associate Professor of Chemistry**

2013-2019 **Assistant Professor of Chemistry**
Department of Chemistry, Morgan State University, Baltimore, MD

2012-2013 **Oak Ridge Associated Universities (ORAU) Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Research Fellow**

2009-2012 **National Institute of Health National Institute of General Medical Sciences (NIH-NIGMS) Pharmacology Research Associate Training (PRAT) Postdoctoral Research Fellow**

2009 **ORAU ORISE Postdoctoral Research Fellow**
Laboratory of Bacterial Polysaccharides, Center for Biologics Evaluation and Research, U.S. Food and Drug Administration, NIH Campus, Bethesda, MD
Research Advisor: Willie Vann, Ph.D.

2003-2009 **Graduate Research Assistant**
Department of Chemistry and Biochemistry, University of Delaware, Newark, DE

2001-2003 **Undergraduate Research Assistant**
Department of Chemistry and Biochemistry, Rowan University, Glassboro, NJ

HONORS AND AWARDS

2020 Morgan State University, Summer Writing Institute Grant

2019 Morgan State University, Office of Technology Transfer, Small Tech Transfer I-GAP Grant Award, Phase B, Role: PI

2018-2021 NIH-NIGMS Support of Competitive Research (SCORE) SC2 Pilot Project Award, Role: PI

2018 Morgan State University, Office of Technology Transfer, Small Tech Transfer I-GAP Grant Award, Role: PI

2016-2019 NIH BUILD/Morgan State University ASCEND Pilot Project Grant Award, Role: PI

2015 Travel Award to National Organization for Black Chemists and Chemical Engineers National Meeting (NOBCChE), The Committee on the Advancement of Women Chemists (COACh)

2015 National Science Foundation Extreme Science and Engineering Discovery Environment (XSEDE) Startup Allocation, Role: PI

2014 MSU, 2014 Applied and Basic Summer Research Grant, Role: PI

2014 Travel Award to NOBCChE, COACh

2012-13	ORAU ORISE Postdoctoral Fellowship
2011	Federation of American Societies for Experimental Biology (FASEB) Travel Award, Microbial Polysaccharides of Medical, Agricultural, & Industrial Importance, FASEB Summer Research Conferences
2009-2012	NIH Pharmacology Research Associate Training (PRAT) Fellowship, NIH-NIGMS
2009	ORAU ORISE Postdoctoral Fellowship
2008	Carl Storm Underrepresented Minority Fellowship Travel Award, Thiol-Based Redox Regulation and Signaling, Gordon Research Conference
2008	E.I. DuPont Graduate Fellowship, NOBCChE
2004-2006	University Graduate Scholar Fellowship, University of Delaware
2003-2004	Chemistry-Biology Interface Predoctoral Trainee, NIH-NIGMS funded training program, University of Delaware
2003	American Institute of Chemists Student Award, New Jersey Section, American Institute of Chemists

PROFESSIONAL MEMBERSHIPS AND SERVICE TO SOCIETIES

2020	Chair, Maryland Local Section, American Chemical Society (ACS)
2019	Vice-Chair, Maryland Local Section, American Chemical Society (ACS)
2018	Chair Elect, Maryland Local Section, American Chemical Society (ACS)
2018-	Member, The Protein Society
2015-	Alternate Councilor, Maryland Local Section, American Chemical Society (ACS)
2015-2019	Webmaster and Editor-in-Chief of *The Chesapeake Chemist*, Maryland Local Section, American Chemical Society
2014-	Member, American Association for the Advancement of Science (AAAS)
2008, 2013-	Member, NOBCChE
2011-	Member, American Society for Biochemistry and Molecular Biology (ASBMB)
2003-	Member, American Chemical Society

PATENTS

2020	U.S. Patent Application No. 16/842,923. Filed on April 8, 2020.: "Bacterial polysaccharides for heavy metal capture". Filed on April 8, 2020.
2019	Provisional patent application number 62/831319: "Bacterial polysaccharides for heavy metal capture". Filed on April 9, 2019.

PUBLICATIONS

Book Chapters

Angela J. Winstead, Dolapo Nurudeen, Khayra Alabrash, Ayanna M. Culmer-Gilbert, John-Paul T. Akinbami, Tiara V. Hinton, Sabreea Parnell, Birsen Y. Varisli, Christopher Krauss, Fasil A. Abebe, Yongchao Zhang, Pumtiwitt McCarthy, Jiangnan Peng, Peter Y. Zavalij, Santosh K. Mandal, Organometallic Rhenium(I) Complexes of Some Non-Steroidal Anti-Inflammatory Drugs (ReNSAIDs): Synthesis, Characterizations, and DNA-Binding Studies in "*A Comprehensive Guide to Non-Steroidal Anti-Inflammatory Drugs*", Süleyman Kaplan, ed. Nova Science Publishers, Inc., 2020 (in press).

Papers in Refereed Journals

- J.L. Malisch, B.N. Harris, S.M. Sherrer, K.A. Lewis, S.L. Shepherd, P.C. McCarthy, J.L. Spott, E.P. Karam, N. Moustaid-Moussa, J.M. Calarco, L. Ramalingham, A.E. Talley, J.E. Canas-Carrell, K. Ardon-Dryer, D.A. Weiser, X.E. Bernal and J. Deitloff. 2020. Opinion: In

the wake of COVID-19, academia needs new solutions to ensure gender equity. *Proc Natl Acad Sci U S A*. 2020 *117(27):15378-15381*

- P.C. McCarthy, R. Wiliams, C. Hughes-Darden, R. Ellington, P. Mayaka, M. Jackson, A. Nkwanta Using Molecular Visualization as a Tool for Culturally Competent and Culturally Relevant Teaching: A Guided-Inquiry Biochemistry Activity. *Journal of Computational Science Education* (2020), 11, 2
- Sharyan, C. Gonzalez, O. Ukaegbu, K. Powell, P.C. McCarthy. Determination of the binding affinities of *Neisseria meningitidis* serogroup W capsule polymerase with two nucleotide sugar substrates. *BMC Research Notes* (2018) 11, 425
- S. Ghimire and P.C. McCarthy. Capture of Pb^{2+} and Cu^{2+} Metal Cations by *Neisseria meningitidis*-type Capsular Polysaccharides. *Biomolecules* (2018) 8, 23
- P.C. McCarthy, A. Sharyan, L. Sheikhi Moghaddam. Meningococcal Vaccines: Current Status and Emerging Strategies. *Vaccines* (2018) 6, 12
- P.T. Wilder, D.J. Weber, A. Winstead, S. Parnell, T.V. Hinton, M. Stevenson, D. Giri, S. Azemati, P. Olczak, B.V. Powell, T. Odebode, S. Tadesse, Y. Zhang, S.K. Pramanik, J.M. Wachira, S. Ghimire, P. McCarthy, A. Barfield, H.N. Banerjee, C. Chen, J.A. Golen, A.L. Rheingold, J.A. Krause, D.M. Ho, P.Y. Zavalij, R. Shaw, S.K. Mandal. Unprecedented anticancer activities of organorhenium sulfonato and carboxylato complexes against hormone-dependent MCF-7 and hormone-independent triple-negative MDA-MB-231 breast cancer cells, *Molecular and Cellular Biochemistry* (2018) 441, 151-163
- K.M. Muindi, P.C. McCarthy, T. Wang, J. Vionnet, M. Battistel, E. Jankowska, and W.F. Vann. Characterization of the Meningococcal Serogroup X Capsule N-Acetylglucosamine-1-Phosphotransferase, *Glycobiology* (2014), *24*, 139-149
- P. C. McCarthy, R. Saksena, D.C. Peterson, C.H. Lee, Y. An, J.F. Cipollo, and W.F. Vann. Chemoenzymatic Synthesis of Immunogenic Meningococcal Group C Polysialic Acid-Tetanus Hc Fragment Glycoconjugates, *Glycocon. J.* (2013), *30*, 857-870
- D.C. Peterson, J. Vionnet, G. Arakere, P.C. McCarthy, and W.F. Vann. Characterization and acceptor specificity of a soluble meningococcal group C polysialyltransferase, *J. Bacteriol.* (2011) 193, 1576-1582
- S.L. Mosley, P.C. Rancy, D.C. Peterson, J. Vionnet, R. Saksena and W.F. Vann. Chemoenzymatic synthesis of conjugatable oligosialic acids, *Biocat. and Biotrans.* (2010) 28, 1-10
- D. Ramadan, P.C. Rancy, R. Nagarthar, J.P. Schneider, C.Thorpe. Arsenic (III) Species Inhibit Oxidative Protein Folding in Vitro, *Biochemistry* (2009) 48, 424-432
- P.C. Rancy and C. Thorpe. Oxidative Protein Folding in vitro: a Study of the Cooperation between Quiescin-sulfhydryl Oxidase and Protein Disulfide Isomerase, *Biochemistry* (2008) 47, 12047-12056
- E.J. Heckler, P.C. Rancy, Vamsi K. Kodali, and C. Thorpe. Generating disulfides with the Quiescin sulfhydryl oxidases. *Biochim. Biophys. Acta* (2008) 1783, 567-577
- S. Sivendran, M.L. Segall, P.C. Rancy, R.F. Colman. Effect of Asp^{69} and Arg^{310} on the pK of His68, a Key Catalytic Residue of Adenylosuccinate Lyase (ASL). *Prot. Sci.* (2007) 16, 1700-1707

RESEARCH PRESENTATIONS

Invited Oral Presentations

2019-Present

- Seminar Speaker, Joint GlycoNet/ACS CARB Webinar series (2020)*upcoming
- Seminar Speaker, Division of Biochemistry, Wayne State University (2020)*upcoming
- Seminar Speaker, Department of Chemistry, Brown University (2020)*upcoming

- Symposium title - *New Tools to Explore the Biology of Bacterial Polysaccharides*, Joint NIH/ACS CARB Virtual Symposium (2020)
- Symposium title - *Recent Advances in Carbohydrate Chemistry and Chemical Glycobiology*", PacificChem, Honolulu, HI, (2020)+postponed due to COVID19
- Natural Science and Mathematics Colloquia, St. Mary's College of Maryland (2020)
- NIH/FDA Glycoscience Research Day, NIH, Bethesda, MD (2019)
- Emerging Investigators: Early Career Organic Chemists Symposium, ACS MARM, Baltimore, MD. (2019)

2013-2019

- Interdisciplinary Seminar Series, Morgan State University, Baltimore, MD (2019)
- Molecular Biology, Biochemistry, Bioinformatics Program, Towson University, Towson, MD (2018)
- NIH/FDA Glycoscience Research Day, NIH, Bethesda, MD (2014)
- DuPont, DuPont Experimental Station, Wilmington, DE (2014)
- Interdisciplinary Seminar Series, Morgan State University, Baltimore, MD (2013)

Postdoctoral and Graduate Work

- Baltimore-Washington Area Glycobiology Interest Group (with Willie Vann), The Johns Hopkins School of Medicine, Baltimore, MD (2012)
- National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Conference, Philadelphia, PA (2008)

Conference Oral Presentations

1. Pumtiwitt C. McCarthy. "Chemoenzymatic strategies to investigate activity of a bifunctional *Neisseria meningitidis* capsule polymerase," ACS National Meeting, Philadelphia, PA (2020, cancelled due to COVID-19 presentation uploaded to SciMeetings)
2. Pumtiwitt C. McCarthy. " Fluorescence and Absorbance Based Assays for a *Neisseria meningitidis* Capsule Polymerase," National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Conference, Minneapolis, MN (2017)
3. Pumtiwitt C. McCarthy. "Biochemical assay development for a *Neisseria meningitidis* capsule polymerase," ACS National Meeting, Washington, DC (2017)
4. Pumtiwitt C. McCarthy. " Biochemical Studies of a Capsule Producing Glycosyltransferase from *Neisseria meningitidis*," National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Conference, Raleigh, NC (2016)
5. Pumtiwitt C. McCarthy. " Development of an Activity Assay for the *Neisseria meningitidis* serogroup W Capsule Polymerase," National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Conference, Orlando, FL (2015)
6. Pumtiwitt C. McCarthy. "Chemoenzymatic Synthesis of Carbohydrates from the Bacterial Pathogen *Neisseria meningitidis*," National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Conference, New Orleans, LA (2014)

Postdoctoral and Graduate Work

7. Pumtiwitt C. McCarthy. "Towards a Well-Defined Meningitis Vaccine: Chemoenzymatic Synthesis of Meningococcal Glycoconjugate Vaccine Candidates." American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, CA. (2012)
8. Pumtiwitt C. McCarthy. "Chemoenzymatic synthesis of an immunogenic meningococcal group C polysialic acid-tetanus Hc fragment glycoconjugate." Microbial Polysaccharides of Medical, Agricultural, & Industrial Importance, FASEB Summer Research Conference, Carefree, AZ. (2011)
9. Pumtiwitt C. McCarthy. "Preparation of a meningococcal group C polysialic acid-tetanus Hc fragment glycoconjugate vaccine candidate by chemoenzymatic synthesis." Frontiers at the Chemistry-Biology Interface Symposium, Newark, DE (2011)

Conference Poster Presentations

1. Laleh Sheikhi Moghaddam, Nyah Johnson, Sydney Brown and Pumtiwitt McCarthy. "One Pot Chemoenzymatic Synthesis of a Photocrosslinking Nucleotide Donor Sugar Derivative to Identify Catalytic Amino Acids of the *N. meningitidis* serogroup W capsule polymerase." The 13th Jenner Glycobiology and Medicine Symposium, Cambridge, MA (2019)
2. Pumtiwitt McCarthy, Abeer Sharyan, Cendy Gonzalez, Ophelia Ukaegbu, Kayla Powell. "Determination of the binding affinities of *Neisseria meningitidis* serogroup W capsule polymerase with two nucleotide sugar substrates." Protein Society Annual Meeting, Boston, MA (2018)
3. Pumtiwitt McCarthy, Cendy Gonzalez, Abeer Sharyan, Sujan Ghimire, Kayla Powell, Chikaodi Nwanegwo, and Ophelia Ukaegbu "Biochemical Assay Development for a Neisseria meningitidis Capsule Polymerase" NOBCChE Northeast/Midwest Regional Meeting, Pittsburgh, PA. (2017)
4. Pumtiwitt C. McCarthy, Corshai Williams, Ophelia Ukaegbu, Tresh Gordon-Travers. "Production of Fluorescent Oligosaccharide Substrates for the *Neisseria meningitidis* Serogroup W Capsule Polymerase" American Society for Biochemistry and Molecular Biology Annual Meeting, Boston, MA. (2015)

Postdoctoral and Graduate Work

5. Pumtiwitt C. McCarthy, Sylvester L. Mosley, Rina Saksena, Dwight C. Peterson, Justine Vionnet, Yanming An, John Cipollo, Willie F. Vann. "Chemoenzymatic synthesis of immunoreactive polysialic acid-tetanus Hc fragment glycoconjugates. Annual Conference for the Society for Glycobiology, Seattle, WA. (2011)
6. Pumtiwitt C. McCarthy, Sylvester L. Mosley, Rina Saksena, Dwight C. Peterson, Justine Vionnet, Willie F. Vann. "Preparation of a meningococcal group C polysialic acid-tetanus Hc fragment glycoconjugate vaccine candidate by chemoenzymatic synthesis." American Society for Biochemistry and Molecular Biology Annual Meeting, Washington, DC. (2011)
7. Pumtiwitt C. McCarthy, Sylvester L. Mosley, Rina Saksena, Dwight C. Peterson, Justine Vionnet, and Willie F. Vann. "Formation of an immunoreactive polysialylated glycoconjugate using chemoenzymatic synthesis." Gordon Research Conference: Biocatalysis. Bryant University, Smithfield, RI. (2010)
8. Pumtiwitt C. McCarthy, Sylvester L. Mosley, Rina Saksena, Dwight C. Peterson, Justine Vionnet, Willie F. Vann. "Chemoenzymatic synthesis of conjugate polysialic acid vaccines." American Chemical Society, Middle Atlantic Regional Meeting. Wilmington, DE. (2010)
9. Pumtiwitt C. Rancy and Colin Thorpe. "Oxidative protein folding in vitro: a study of the cooperation between Quiescin sulfhydryl oxidase and reduced protein disulfide isomerase." Gordon Research Conference: Thiol-Based Redox Regulation and Signaling, Barga, Italy (2008)

Pedagogical Presentations/Webinars

1. "The Morgan Teaching to Increase Diversity in STEM (MTIDES) Project". Webinar archived here: https://www.youtube.com/watch?v=kXFkKoK_FJg
2. "Using Molecular Visualization as a Tool for Culturally Sensitive Teaching and Biochemistry". AAC&U Project Kaleidoscope Conference, Stevenson University, Pikesville, MD (2018) (panelist)
3. Pumtiwitt C. McCarthy, "Infusing Computational Science and Cultural Competency into Biochemistry for Majors and Biochemistry for Non-Majors,", AAC&U Project Kaleidoscope Conference, Morgan State University, Baltimore, MD (2017) (poster)

RESEARCH SUPERVISED

Research Personnel

Nikki Handy, M.S.

- Laboratory Technician

Current Graduate Students

Ph.D.
1. Muyideen Haruna, (Bioenvironmental Science)
Project*: Bacterial Polysaccharides for Heavy Metal Capture*
Summer 2020-present
2. Ayobami Adegbite, (Bioenvironmental Science)
Project*: Mechanistic Studies of a Bacterial Capsule Polymerase*
Summer 2018-present
- 2 research poster presentations at local/national conferences

3. Laleh Sheikhi Moghaddam, (Bioenvironmental Science)
Project*: Mechanistic Studies of a Bacterial Capsule Polymerase*
Fall 2017-present
- 1 research award, 4 research poster and 1 oral presentations at local/national conferences

Former Graduate Students

Ph.D.
4. Mylik Gregory, (Bioenvironmental Science)
Project*: Bacterial Polysaccharides for Heavy Metal Capture*
2018-2019

M.S.
5. Abeer Sharyan
M.S. in Science, (Chemistry)
Thesis Title*: Biochemical Assays for the Neisseria meningitidis serogroup W Capsule Polymerase,* May 2018
- SCMNS Outstanding STEM Master's Thesis

6. Sujan Ghimire
M.S. in Science, (Chemistry)
Thesis title: *Metal Binding to Macromolecules: Bacterial Polysaccharides for Heavy Metal Capture and Rhenium Complexes as Anticancer Agents,* December 2017
- 2 research poster presentations at local/national conferences

7. Cendy (Gonzalez) Alcantara
M.S. in Science, (Biology)
Thesis title: *Neisseria meningitidis Serogroup W Capsule Polymerase: Determining Enzyme Kinetics of Donor Sugars and Development of a Chemoenzymatic Method To Produce a Photocrosslinking Derivative,* May 2017
- 3 research poster presentations at local/national conferences; 3 research awards

Current position: Research Laboratory Technician, Center for Immunization Research, Johns Hopkins Bloomberg School of Public Health

Current Undergraduate Students
1. MaryAgnes Balogun, Sophomore, Major: Chemistry
Project: *Mechanistic Studies of a Bacterial Capsule Polymerase*
Summer 2020-present
2. Charlene Shoetan, Sophomore, Major: Chemistry
Project*: Mechanistic Studies of a Bacterial Capsule Polymerase*
Summer 2019-present
- 1 research poster presentations at a local conference

3. Nyah Johnson, Senior, Major: Chemistry
Project*: Mechanistic Studies of a Bacterial Capsule Polymerase*
Summer 2017-present

- 5 research poster presentations at local/national conferences

Former Undergraduate Students

4. Adedoyin Adesina, Senior, Major: Biology
Projects*: Mechanistic Studies of a Bacterial Capsule Polymerase/Bacterial Polysaccharides for Heavy Metal Capture*
Fall 2019-present

5. Tamia Johnson, Junior, Major: Biology
Projects*: Mechanistic Studies of a Bacterial Capsule Polymerase/Bacterial Polysaccharides for Heavy Metal Capture*
Spring 2020-present

6. Bolutife Baiyewu, Sophomore, Major: Biology
Projects*: Mechanistic Studies of a Bacterial Capsule Polymerase*
Fall 2017-Spring 2018

7. Kayla Powell, Junior, Major: Chemistry
Isolation of Sugar-Producing Enzymes from Pathogenic Bacteria
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
- 3 research poster presentations at local/national conferences; 1 oral presentation; 2 research awards

Spring 2015-Summer 2017

8. Chikaodi Nwanegwo, Sophomore, Major: Chemistry
Isolation of Sugar-Producing Enzymes from Pathogenic Bacteria
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
- 3 research poster presentations at local/national conferences; 2 research awards

Fall 2015-Spring 2017

9. Ophelia Ukaegbu, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis; Isolation and Characterization of a Sugar-Producing Enzyme From the Pathogenic Bacteria Camplyobacter jejuni
- 5 research poster presentations at local/national conferences; 1 oral presentation; 9 research awards

Summer 2014-Summer 2016
Currently pursing Ph.D. Biochemistry, University of Delaware, entered Fall 2016

10. Tresha Gordon-Travers, Senior, Major: Nutritional Sciences
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Winter 2015-Spring 2015
- 1 research poster presentations at local conference

11. Anita Tembo, Senior, Major: Medical Technology
Growth, Expression and Purification of Neisseria meningitidis CMP-Sialic acid Synthetase
Summer 2015

12. Ugomma Etoh, Sophomore, Major: Chemistry
Isolation of Sugar-Producing Enzymes from Pathogenic Bacteria
Spring 2015
- 1 research award

13. Jessica Purviance, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Fall 2014, Spring 2015

14. Ngozi Madu, Junior, Major: Medical Technology
Isolation of Sugar-Producing Enzymes from Pathogenic Bacteria
Spring 2015-Fall 2015
Currently pursing Ph.D. Medical Sciences, University of Delaware
15. Desiree Record, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Winter 2015-Spring 2015
Currently pursing Dentistry, UCLA
16. Samuel Kudadji, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Fall 2014
17. Saeed Alsolumi, Junior, Major: Medical Technology
Isolation and Characterization of a Sugar-Producing Enzyme from the Pathogenic Bacteria Camplyobacter jejuni
18. Francis Owolabi, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Spring 2014
19. Erika Okehie, Senior, Major: Chemistry
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Spring 2014

<u>High School Students</u>
1. Heaven Cross (Bel Air High School, virtual high school internship), *Protein Visualization Using Open Source Bioinformatics Tools*
Summer 2020
2. Arianna Pankey (Eleanor Roosevelt High School, supported by Army REAP Program)
Biosynthesis of Modified Sugars for Vaccine Development
Summer 2019
- 1 research poster presentations at local conference

3. Rudy Diaz (Baltimore Polytechnic Institute, supported by ACS Project SEED)
Biosynthesis of Modified Sugars for Vaccine Development
Summer 2019
- 1 research poster presentations at local conference

4. Sydney Brown (From the Heart Christian school, sophomore, supported by Army REAP Program)
Growth, Expression, and Purification of a Sugar-Producing Enzyme from Neisseria meningitidis
Summer 2018
- 1 research poster presentations at local conference

5. Jayda Smith (Western High School senior, supported by ACS Project SEED)
Growth, Expression, and Purification of a Sugar-Producing Enzyme from Neisseria meningitidis
Summer 2015
Currently enrolled at University of Maryland, College Park
6. Corshai Williams (Western High School graduate, supported by ACS Project SEED)
Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis
Summer 2014

Currently enrolled in Ph.D. program in Chemistry at MIT.

Prior to Morgan State University
Janet Karanja, FDA-CBER intern, student from University of Maryland-College Park (Summer 2013) *Isolation of a Sugar-Producing Enzyme From the Pathogenic Bacteria Neisseria meningitidis*

TEACHING EXPERIENCE
Graduate
Graduate Thesis Seminar (2014-2019 Fall)
Supervised Research in Chemistry (2015-2020 Spring)
Advances in Biochemistry – Lecture (Graduate level course) (2014-2020 Spring)
Modern Research Techniques (Biology graduate level course) (Summer 2015)
Undergraduate
General Chemistry I – Laboratory (2013F, 2017 Fall)
Biochemistry – Lecture/Laboratory (2013-2020 Fall)
Biochemistry II – Lecture (2019 Spring, 2020 Spring)
Biochemistry for Health Majors – Lecture/Laboratory (2014-2017 Spring)
Effective Technical Presentations (2017, 2018, 2020 Fall)
Undergraduate Research (2020 Fall)
Senior Seminar (2015-2020 Spring)

COMMITTEE WORK AND SERVICE

2020-present	Member, Ad-Hoc Subcommittee, ACS CARB Joint EuroCarb/GlycoNet Fall Seminar Planning Committee, ACS CARB Division
2020-present	Reviewer Board Member, *Vaccines*
2019-present	Member, Faculty Advisory Committee, NIMHD-funded RCMI@Morgan, Center for Urban Health Disparities Research & Innovation: Research Infrastructure Core (RIC)
2019	Invited Speaker, Women Chemists Committee Luncheon, ACS Middle Atlantic Regional Meeting, Title: "My Journey Through Science"
2019	External Program Evaluator, Biochemistry Program, University of Maryland Eastern Shore
2019	Invited Seminar Speaker, MSU Science Graduate Students Association, Title: "How to Write a Winning Grant Proposal"
2019	Ph.D. Bioenvironmental Science Dissertation Committee, Christopher Krauss, MSU
2019	M.S. Biology Thesis Committee member, Jazmin Gonzalez, MSU
2018-2019	Co-Organizer for ACS CARB Division "Glycans in Context" Symposium, 2019 ACS Fall National Meeting, San Diego, CA
2018-2019	Fundraiser for ACS CARB Division "Glycans in Context" Symposium, 2019 ACS Fall National Meeting, San Diego, CA
2018-2020	Proposal Reviewer (NSF HBCU-UP, NSF DRK-12)
2018	Expert Reviewer, ECOS-Sud-Argentine, Université Paris 13
2018-2020	SCMNS representative, University Council, MSU
2018-	Conflict of Interest Committee, MSU
2018-2020	Faculty Evaluation Survey Instrument Committee, SCMNS, MSU
2018	Host, 2018 BioMolViz Protein Visualization Workshop (funded by NSF-IUSE # 1712268, PI: Dries)
2018, 2014	Oral Presentation Judge, 21st Annual Undergraduate and Graduate Science Research Symposium at MSU

2017-2019	Exposition and Sponsorship Co-Chair, 2019 ACS Middle Atlantic Regional Meeting
2017-present	Manuscript reviewer: *Vaccines, Biomolecules, Applied Sciences, Applied Microbiology and Biotechnology*, *Antioxidants*, *Molecules, International Journal of Environmental Research and Public Health*, *Marine Drugs, Analytical Methods*, *Journal of Chromatography B, Nephrology Dialysis Transplantation, Bielstein's Journal of Organic Chemistry*
2017	Ph.D. Bioenvironmental Science Dissertation Committee, Zainab Boone-Kukoyi, MSU
2017	M.S. Biology Thesis Committee member, Kaisha Hazel, MSU
2016	Chair, Technical Session 17: Biochemistry and Chemical Biology NOBCChE Annual Conference
2016	M.S. Chemistry Thesis Committee member, Fatmah Alsharari, MSU
2015	M.S. Chemistry Thesis Committee member, Aysha Zaakan, MSU
2015	M.S. Biology Thesis Committee member, Aryan Vahedi-Faridi, MSU
2015	Research Mentor, Summer Research Institute, MSU ASCEND program, NIH BUILD-funded program
2015	Invited Speaker, Summer Academy of Mathematics and Science (SAMS) high school program, MSU. Presentation title: "Bacterial Sugars: Tools for Biomedical Science"
2015	Faculty Mentor, Fusion Forum Graduate Recruitment Program, Carnegie Mellon University, Pittsburgh, PA
2015	Abstract Reviewer, 2015 Annual Biomedical Research Conference for Minority Students
2015, 2013	Poster Judge, NIH/FDA Glycosciences Research Day, National Institutes of Health
2015-present	Member, Appointment, Promotion and Tenure Committee, MSU
2015-present	Member, Selection Committee for M.S., Chemistry Program, MSU
2015, 2014	Judge, "Disease Detectives" test for Maryland Science Olympiad, Baltimore Regional Tournament
2014-present	CHEM105L: General Chemistry Laboratory Teaching Assistant Coordinator, MSU
2014-present	Chair, Chemistry Department Advising Committee, MSU
2014-present	Member, Chemistry Department Curriculum Committee, MSU
2014-present	Member, Selection Committee for Ph.D. Program in Bioenvironmental Sciences, MSU
2014	Invited Speaker, Summer Academy of Mathematics and Science (SAMS) high school program, MSU. Presentation title: "Sweet Isn't Always Nice: Studies of Proteins that Make Important Sugars in a Bacteria that Causes Meningitis"
2014	Panelist, "Pre-tenure Years – Teaching Intensive" at 2014 NIH Annual Career Symposium, National Institutes of Health
2013-2014	Member, SCMNS Spring 2014 Faculty Development Workshop Planning Committee, MSU

SERVICE GRANTS

2019	ACS Project SEED grant, Co-PI, Project Title: *Biosynthesis of Modified Sugars for Vaccine Development*
2019	Leadership Institute Partnership Mini-Grant, ACS Local Section Affairs Committee
2019	Science Advocate Grant, Society for Science & The Public

2015 ACS Project SEED grant, Co-PI, Project Title: *Growth, Expression, and Purification of a Sugar-Producing Enzyme from Neisseria meningitidis*

2014 ACS Project SEED grant, Co-PI, Project Title: *Production of Fluorescent Carbohydrate Substrates for a Sugar-Producing Enzyme from Neisseria meningitidis*

PROFESSIONAL DEVELOPMENT ACTIVITIES

2019 AAC&U PKAL STEM Leadership Institute

2018 NIH National Research Mentoring Network Grantwriting Workshop

2017 Mobile Summer Institute on Scientific Teaching

2016 NSF Early Career Investigator Grantwriting Workshop

2015 COACh workshop: Negotiation, Communication and Leadership Workshop for Faculty

2014-2015 NSF Building Connections Mentoring program

2014 Quality Education for Minorities Professional Development Workshop for the NSF-MRI Program

2014 NIH Regional Seminar on Program Funding and Grants Administration

2014 QEM Professional Development Workshop for Assistant Professors

2014 COAChing Strong Women in the Art of Strategic Persuasion

2013 Research Faculty Boot Camp Series: Professionally Packaging a Grant Proposal