

Rosalynn Quiñones

Education

- August 2008 **Ph.D. in Chemistry**
Bayer School of Natural & Environmental Science, Duquesne University, Pittsburgh, PA
Advisor: Dr. Ellen S. Gawalt *Date of completion:* July 2008
Dissertation title: “Modification of Nitinol, Nickel and Titanium Oxides with Self-Assembled Monolayers and Polymers for Corrosion Mitigation in Biomaterial Applications”
- December 2002 **B.S. in Industrial Chemistry**
Natural Science Department
Certification in Management
University of Puerto Rico, Humacao, P.R.

Professional Experience

- May 2019 – Present **Associate Professor**
Chemistry Department, Marshall University, Huntington, WV
- July 2013 – May 2018 **Assistant Professor**
Chemistry Department, Marshall University, Huntington, WV
- 2011 – 2013 **National Science Foundation (NSF) Postdoctoral Research Fellowship**
Chemistry Department, Washington & Jefferson College, Washington, PA
Advisor: Prof. Robbie J. Iulucci
- 2010 – 2011 **Adjunct Faculty**
Chemistry Department, Duquesne University, Pittsburgh, PA
- 2008 – 2010 **Alliance for Graduate Education and the Professoriate (AGEP) Postdoctoral Fellowship**
Chemistry Department, University of Michigan, Ann Arbor, MI
Advisor: Prof. Adam J. Matzger

Research Experience

July 2013 – Present
Associate Professor

Marshall University, Huntington, WV

- Discovery and screening of new crystal forms (polymorphs) of pharmaceutical compounds using solvent methods and self-assembled monolayers
- Modification and characterization of metal oxide nanoparticles using self-assembled monolayers and polymers
- Analyze film and nanostructure properties using reflectance IR Spectroscopy, powder X-Ray diffraction (PXRD), solid state nuclear magnetic resonance (SS-NMR), and scanning electron microscope (SEM)

- Work function analyses are performed to analyze the charge injection of the modified samples using Ultraviolet photoelectron spectroscopy (UPS)
- Forensic chemistry analysis of cannabis and fingerprint powder using spectroscopy
- Mentor undergraduate research and ACS SEED high school students who presented in the Summer Research Program at Marshall University and/or at regional and national American Chemical Society (ACS) meetings

June 2011 – May 2013

National Science Foundation (NSF) Postdoctoral Research Fellow

Washington & Jefferson College (W & J), Washington, PA

- Characterized metal oxide nanoparticles modified using self-assembled monolayers
- Analyzed film and nanostructure properties using reflectance IR Spectroscopy, powder X-Ray diffraction (PXRD), solid-state nuclear magnetic resonance (SS-NMR), and scanning electron microscope (SEM)
- Electrochemical analyses were performed to analyze the charge transfer effect of the modified samples using cyclic voltammetry (CV)
- Used surface free radical polymerization to synthesize polymer brushes onto the metal oxide nanostructures
- Instructed four undergraduate students on the surface modification of nanoparticles as part of the NSF-REU program and research courses at Washington & Jefferson College
- Mentored undergraduate research students who presented posters at the Pittsburgh Summer Undergraduate Research Symposium

Aug. 2008 - Jul. 2010

Alliance for Graduate Education and the Professoriate (AGEP) Postdoctoral Research Fellow, University of Michigan, Ann Arbor, MI

- Discovered and screened new crystal forms (polymorphs) of pharmaceutical compounds using polymer-induced hetero-nucleation, sublimation, and solvent methods
- Optimized molecules via computational chemistry calculations using Gaussian 0S, Spartan, and NMR calculations
- Analyzed the chemical and physical properties of the crystal forms using Raman and IR Spectroscopy, DSC, TGA, and PXRD
- Supervised and trained graduate students to work in the modification of stainless steel to form polymer brushes

Jan. 2004 - Jul. 2008

Graduate Research, Duquesne University, Pittsburgh, PA

- Formation and characterization of self-assembled monolayers (SAMs) on nitinol (Ni-Ti alloy), nickel, and titanium oxide surfaces
- Developed a method to differentiate between monolayer and multilayer films of organic acids on metal oxide using mass spectrometry
- Analyzed film properties using reflectance IR Spectroscopy, MALDI-TOF MS, contact angle, and atomic force microscopy
- Used free radical polymerization to synthesize polyethylene glycol and polystyrene onto nitinol and nickel oxide surfaces
- Characterized the corrosion-resistant properties of polymeric and SAM films using electrochemical analysis
- Instructed two high school students and three undergraduate students on the surface modification of nitinol as part of Duquesne University's SEED and NSF-REU program

Teaching Experience

August 2013 – Present

Associate Professor, Marshall University, Huntington, WV

- Teach analytical chemistry lecture and laboratory (CHM 345) for chemistry and chemical education students
- Teach a study travel class to science and non-science majors (CHM 101 and CHM 475) for Winter 2015, and 2017 term The course was on "Introduction to Chemistry: Chemistry and Art in Italy" and fulfilled a science elective requirement
- Teach a study travel class to non-science majors (CHM 101) for Winter 2019 term The course was on "Introduction to Chemistry: Chemistry in the Kitchen" and fulfilled a science elective requirement
- Teach Principles of Chemistry I and II lecture (CHM 211 and CHM 212) and laboratory (CHM 217 and CHM 218) for 1st college students
- Teach Modern Instrumental Methods lecture and lab (CHM 411, 511) for fourth-year undergraduate and master graduate students
- Research-based lab was created and developed in the Analytical Chemistry and Modern Instrumental Methods labs (CHM 345, 411, 511) by modules based on sunscreen lotion analysis using separation methods, spectroscopy, microscopy instruments

June 2011 – May 2013

National Science Foundation (NSF) Postdoctoral Research Fellow, Washington & Jefferson College, Washington, PA

- Taught Intersession travel classes to science and non-science majors (CHM 330 and CHM 130). The course was on "The Scientific Wonders of a Caribbean Island: Puerto Rico" and fulfilled a laboratory graduation requirement
- Taught instrumentation lecture and laboratory (CHM 470, CHM 480) for fourth-year college students
- Taught analytical chemistry laboratory for second-year college students (CHM 270)
- Developed all educational, cultural, and extracurricular activities for travel class (CHM 330 and CHM 130)
- Arranged lodging, food, lectures, lab space, budget, transportation, safety issues, and activity planning for travel class (CHM 330 and CHM 130)
- Inquiry-based lab was created and developed in the instrumentation lab (CHM 480) by modules based on my research of metal oxide nanoparticles which includes: polymer brushes, chromophore attachment, thin film formation, and sunscreen lotion analysis

Aug. 2010 – Apr. 2011

Adjunct Faculty, Duquesne University, Pittsburgh, PA

- Taught General Chemistry recitation for 1st-year college students

Sept. – Oct. 2009

Postdoctoral Short-Course on College Science Teaching, University of Michigan, Ann Arbor, MI

- Completed six intensive weeks of science educator training that included the development of a course syllabus and inquiry-based lab lesson plan, incorporating active learning to lecture, and two practice teaching sessions sponsored by the Rackham Graduate School and the Center for Research on Learning and Teaching (CRLT)
- Led activities during the sessions that reinforced the material introduced in the podcasts, readings, and assignments

Jan. 2004 – Dec. 2007

Teaching Assistant, Duquesne University, Pittsburgh, PA

- Prepared pre-lab lessons on current experiments
- Taught General Chemistry laboratory for first undergraduate students
- Taught Organic Chemistry laboratory for second year undergraduate students
- Developed quizzes, experiments, and assigned homework for students
- Proctored and graded Departmental Chemistry exams

Work Experience

Mar. 2003 – Jan. 2004

QSC Analyst, Mc Neil Consumer Care, Las Piedras, P.R.

- Audited documentation of subcontractor labs
- Performed confirmatory analysis of the chemical and physical properties of drugs analyzed by the subcontractor labs using dissolution apparatus
- Developed an Excel spreadsheet to accelerate the documentation review

Oct. 2002 – Feb. 2003

Environmental Consultant, Fernando L. Rodriguez P. E. and Assoc., Rio Piedras, P.R

- Analyzed environmental samples
- Prepared environmental chemistry reports
- Was liaison to subcontractors and clients
- Supervised subcontractors in environmental sampling

May – Oct. 2002

Laboratory Technician, Ciba Vision, Cidra, P.R.

- Analyzed in-process material of contact lenses using GC, HPLC, FTIR, pH, conductivity meter, viscosity, and UV-Vis spectrophotometer instruments for quantitative and qualitative analysis
- Utilized pycnometer to measure the specific gravity of the liquids

Aug. – Dec. 2001

Laboratory Technician, Galephar Pharmaceutical, Juncos, P.R.

- Used HPLC and UV instruments to perform physical and chemical analysis of various pulmonary indicator drugs

Research Publications (undergraduate students highlighted in blue font and bold and graduate students highlighted in red font and bold)

Marshall University Publications

1. **Moreno, S.**; Strouten-Ebert, A.; Waugh-Richards, L.; Quiñones, R.; “An Evaluation of the Cannabinoid Content of the Liquid and Thermal Degradation Analysis of Cannabis-Labeled Vape Liquids”, *Journal of Forensic Science*, **Under Review**.
2. Quiñones, R.; Casiano-Negroni A.; **Pijor, H.**; **Moreno, S.**; Suarez, K.; Westfall, T.D.; **Sullins, C.**; Ivey, S.; Buxó, J.A. “Analysis of Cannabinoids in Lotions Using High-Performance Liquid Chromatography”, *J Chem Educ.* **2022**, 99, 10, 3558–3565.
3. Quiñones, R.; **Moreno, S.**; Smythers A.L.; **Sullins, C.**; **Pijor, H.**; **Brown, G.** Strouten, A.; Waugh-Richards, L.; Siddig, A. “Quantification of Cannabis in Infused Consumer Products and Their Residues on Skin”, *ACS Pharmacol. Transl. Sci.*, **2022**, 5, 8, 642–651.
4. **Moreno, S.**; **Brown, G.**; **Klein, M.**; Wang, Q.; Markiewicz, J.T.; Aleman, E. A.; Rushton, C.; Quiñones, R. “Chemical Composition Effect on Latent Print Development Using Black Fingerprint Powders”, *Forensic Chemistry*, **2021**, 26, 100366.
5. Wang, Y.; Wildfire, C.; Khan, T. S.; Shekhawat, D.; Hu, J.; Tavazde, P.; Quiñones, R. **Moreno, S.** “Effects of Support and Promoter on Ru Catalyst Activity in Microwave-assisted Ammonia Synthesis”, *Chemical Engineering Journal*, **2021**, 425, 1, 130546.
6. Quiñones, R.; **Moreno, S.**; **Shoup, D.**; **Klein, M.**; Westfall, T.M.; **Damai, A.** “Examining particle size of inorganic active ingredients within sunscreens using dynamic light scattering”, *J Chem Educ.* **2021**, 98, 4, 1371–1380.
7. Holmes, S.T.; Engl, O. G.; Srncic, M.N.; Madura, J.D.; Quiñones, R.; Harper, J.K.; Schurko, R.W.; Iuliucci, R.J. “Chemical Shift Tensors of Cimetidine Form A Modeled with Density Functional Theory Calculations: Implications for NMR Crystallography”, *J. Phys. Chem. A*, **2020**, 124, 3109–3119.

8. Quiñones, R.; Kolling, D. R. J. ; **Shoup, D.**; **Smythers, A.L.**; **Nickel, S.**; Westfall, T. D.; Epperly, C.; **Coplin, M.** “Comparing free radicals in sunscreen-treated pig skin as revealed by electron paramagnetic resonance spectroscopy”, *J. Chem. Educ.*, **2019**, 96, 2021–2028.
9. Quiñones, R.; Iuliucci, R. J. ; **Behnke, G.**; **Brown, R.**; **Shoup, D.**; **Riedel, T.M.** ; **Plavchak, C.**; **Lininger, B. E.**; **Spehar, J. M.** “Moving Towards Fast Characterization of Polymorphic Drugs by Solid-State NMR Spectroscopy”, *Journal of Pharmaceutical and Biomedical Analysis*, **2018**, 148C, 163 – 169.
10. Quiñones, R.; **Brown, R.**; **Searls, N.**; Richards-Waugh, L. “Study of Polymorphism using Patterned Self-Assembled Monolayers Approach on Metal Substrates”, *Applied Surface Science*, **2018**, 427, 97 – 105.
11. Quiñones, R.; **Shoup, D.**; **Behnke, G.**; **B.** ; **Peck, C.**; Agarwal, S. ; Gupta, R.K.; Fagan, J.W.; Mueller, K.T.; Iuliucci, R. J.; Wang, Q. “Study of Perfluorophosphonic Acid Surface Modifications on Zinc Oxide Nanoparticles”, *Materials*, **2017**, 10, 1363.
12. Quiñones, R.; **Garretson, S.**; **Behnke, G.**; Fagan, J.W.; Mueller, K.T. ; Agarwal, S. ; Gupta, R.K. “Fabrication of Phosphonic Acid Films on Nitinol Nanoparticles by Dynamic Covalent Assembly”, *Thin Solid Films*, **2017**, 642C, 195 – 206.
13. Quiñones, R.; Logan, J. L.; Sunderland, D. P.; Neff, D.; Westfall, T. D.; **Hijazi, A.** “Integrating Elemental Analysis and Chromatography Techniques by Analyzing Metal Oxide and Organic UV Absorbers in Commercial Sunscreens”, *J. Chem. Educ.*, **2016**, 93 (8), 1434–1440.
14. Logan, J. L.; Quiñones, R.; Sunderland, D. P. “Poster Presentations: Turning a Lab of the Week into a Culminating Experience”, *J. Chem. Educ.*, **2015**, 92 (1), 96–101.
15. Quiñones, R.; **Rodriguez, K.**; Iuliucci, R. J. “Investigation of phosphonic acid surface modifications on zinc oxide nanoparticles under ambient conditions”, *Thin Solid Films*, **2014**, 564, 155 – 164.
16. **Pacilio J. E.**; **Tokarski, J. T.**; Quiñones, R.; Iuliucci, R. J. “High Resolution Solid-State NMR: Characterization of Polymorphism in Cimetidine a Pharmaceutical Compound”, *J. Chem. Educ.*, **2014**, 91 (8), 1236–1239.

Other Publications

17. Roy, S.; Quiñones, R.; Matzger, A. “Structural and Physicochemical Aspects of Dasatinib Hydrate and Anhydrate phases”, *J. Cryst. Growth Des.*, **2012**, 12 (4), 2122–2126.
18. **Lutker, K. M.**; Quiñones, R.; Xu, J.; Ramamoorthy, A.; Matzger, A. J. , “Polymorphs and Hydrates of Acyclovir”, *J. Pharm. Sci.*, **2011**, 100 (3), 949 – 963.
19. Raman, A.; Quiñones, R.; **Barriger, L.**; Eastman, R.; Parsi, A.; Gawalt, E. S. “Understanding Organic Film Behavior on Alloy and Metal Oxides”, *Langmuir*, **2010**, 26 (3), 1747–1754.
20. Lekse, J; Yao, J., Quiñones, R.; Aitken, J. A. “Synthesis, Structure, and Physicochemical Characterization of a Noncentrosymmetric, Quaternary Thiostannate: $\text{EuCu}_2\text{SnS}_4$ ”, *J. Solid State Chem.*, **2009**, 182 (1), 141 – 146.
21. Quiñones, R.; Gawalt, E. S. “Polystyrene Formation on Monolayer-Modified Nitinol Effectively Controls Corrosion”, *Langmuir*, **2008**, 24 (19), 10858 – 10864.
22. Quiñones, R.; Raman, A.; Gawalt, E. S. “Functionalization of nickel oxide using alkylphosphonic acid self-assembled monolayers”, *Thin Solid Films*, **2008**, 516 (23), 8774 – 8781.
23. Quiñones, R.; Gawalt, E. S. “Study of the Formation of Self-Assembled Monolayers on Nitinol”, *Langmuir*, **2007**, 23 (20), 10123 – 10130.
24. Quiñones, R.; Raman, A. Gawalt, E. S. “An approach to differentiating between multi- and monolayers using MALDI-TOF MS” *Surf. Interface Anal.*, **2007**, 39 (7), 593 – 600.

Technical Presentations (undergraduate students highlighted in blue font and bold and graduate students highlighted in red font and bold)

1. **Biology Department seminar**, Marshall University, Huntington, W.V., Feb.2023, “Quantification of Cannabis in Infused Consumer Products and Their Residues on Skin” (oral-invited)
2. **University of Puerto Rico**, Humacao, P.R., Oct. 2022, R. Quiñones, “Quantification of Cannabis in Infused Consumer Products and Their Residues on Skin” (oral-invited)
3. **Southeastern Regional Meeting American Chemical Society (SERMACS)**, San Juan, P.R. Oct. 2022, R. Quiñones, “A “jump” from a Caribbean Island to being a chemistry faculty in the Appalachian” (oral-invited)
4. **Forensic seminar**, Duquesne University, Pittsburgh, PA, “Using chemistry to solve forensic questions” (Oral-invited)
5. **American Chemical Society (ACS) National Meeting**, San Diego, CA, Mar. 2022, R. Quiñones, Anette Casino- Negroni, “Analysis of cannabinoids in lotions using chromatography for analytical courses” (Oral)

6. **Chemistry seminar**, University of Michigan-Dearborn, MI, R. Quiñones, “Templates for inducing polymorphism using patterned self-assembled monolayers approach on metal substrates and fast characterization of polymorphic drugs using solid-state NMR” (Oral-invited)
7. **258th American Chemical Society (ACS) National Meeting**, San Diego, CA, Aug. 2019. R. Quiñones, “Comparing free radicals in sunscreen-treated pig skin as revealed by electron paramagnetic resonance spectroscopy” (Oral)
8. **257th American Chemical Society (ACS) National Meeting**, Orlando, FL, Apr. 2019. R. Quiñones, “Using clickers for more than just “clicking” things” (Oral)
9. **Third Thursday Series at Marshall University**, Huntington, WV, Oct. 2018. R. Quiñones, “How Metals Can Be Used to Improve Sunscreens and Pharmaceuticals” (Invited speaker)
10. **255th American Chemical Society (ACS) National Meeting**, New Orleans, LA, Mar. 2018. **G. Behnke**, R. Quiñones, “Using inductively coupled plasma atomic spectroscopy and solid-state NMR spectroscopy to increase characterization speed of polymorphic drugs” (Oral)
11. **255th American Chemical Society (ACS) National Meeting**, New Orleans, LA, Mar. 2018. **S. Garretson, H. Smith, L. Salameh**, N. Spitzer. R. Quiñones, “B35 neuroblastoma cells cultured on phosphonic acid-modified and unmodified nitinol nanoparticles to test effects on neural morphology” (Poster)
12. **255th American Chemical Society (ACS) National Meeting**, New Orleans, LA, Mar. 2018. **D. Shoup**, R. Quiñones, “Study of perfluorophosphonic acid surface modifications on zinc oxide nanoparticles” (Poster)
13. **255th American Chemical Society (ACS) National Meeting**, New Orleans, LA, Mar. 2018. “Study of polymorphism using patterned self-assembled monolayers approach on metal substrates” (Oral)
14. **WVU chemical engineering department seminar series**, Morgantown, WV, Sept. 2017. Quiñones, R. “Study of polymorphism using patterned self-assembled monolayers approach on metal substrates” (Invited speaker)
15. **Eastern Analytical Symposium (AES)**, Princeton, NJ, Nov. 2017. Quiñones, R. “Moving Towards Fast Characterization of Polymorphic Drugs by Solid-State NMR Spectroscopy” (Invited speaker)
16. **253th American Chemical Society (ACS) National Meeting**, San Francisco CA, Apr. 2017. “Analysis of Metal Oxide and Organic UV Absorbers in Commercial Sunscreens” (Invited speaker)
17. **253th American Chemical Society (ACS) National Meeting**, San Francisco CA, Apr. 2017. **Garretson, S.;** Quiñones, R. “Modification of nitinol nanoparticles with self-assembled alkylphosphonate films ” (Poster)
18. **253th American Chemical Society (ACS) National Meeting**, San Francisco CA, Apr. 2017. **Maddox, T.;** Quiñones, R. “Polymorphs and solvates of Erlotinib and Dasatinib” (Poster)
19. **253th American Chemical Society (ACS) National Meeting**, San Francisco CA, Apr. 2017. **D. Shoup**, R. Quiñones, “Modification of nitinol nanoparticles with self-assembled alkylphosphonate films “(Poster)
20. **253th American Chemical Society (ACS) National Meeting**, San Francisco CA, Apr. 2017. **Behnke, G.;** Quiñones, R. “Modification of the surface of zinc oxide nanoparticles in order to increase efficiency of solar cells” (Poster)
21. **Renewable Energy in West Virginia: Projects and Prospects in 2016**, Huntington, WV, May 12 2016. “Controlling surface properties of metal oxide to improve solar cell efficiency” (Invited speaker)
22. **47th American Chemical Society (ACS) Central Regional Meeting**, Covington, KY, May 2016. **Garretson, S.;** Quiñones, R. “Modification of Nitinol Nanoparticles with Phosphonic Acid Films” (Poster)
23. **47th American Chemical Society (ACS) Central Regional Meeting**, Covington, KY, May 2016. **Searls, N.;** Quiñones, R. “Polymorphism: Changing active pharmaceuticals by surface modification” (Oral)
24. **ACS Upper Ohio Valley section**, Athens, OH, Oct. 2015. “Controlling Surface Properties of Metal Oxide Using Self-Assembled Monolayers and Polymer Brushes” (Invited speaker)
25. **250th American Chemical Society (ACS) National Meeting**, Boston, MA, Aug. 2015. **S. Garretson**, R. Quiñones, “Modification of Nitinol Nanoparticles with Phosphonic Acid Films” (Poster)
26. **250th American Chemical Society (ACS) National Meeting**, Boston, MA, Aug. 2015. **C. Peck**, R. Quiñones, “The Modification of Zinc oxide Nanoparticles with Perfluoro Phosphonic Acids.” (Poster)
27. **45th American Chemical Society (ACS) Central Regional Meeting**, Pittsburgh, PA, October 2014. **Peck, C.;** Quiñones, R. “Modified surface of zinc oxide nanoparticles using perfluorophosphonic acid self-assembled monolayers” (Poster)
28. **45th American Chemical Society (ACS) Central Regional Meeting**, Pittsburgh, PA, October 2014. **Searls, N.;** Quiñones, R. “Polymorphism: Screening active pharmaceuticals using SAMs and metal plates” (Poster)

29. **245th American Chemical Society (ACS) National Meeting**, Philadelphia, PA, Aug. 2012. "Controlling Surface Properties of Metal Oxide Nanoparticles using Self-Assembled Monolayer and Polymer Brushes" (Oral)
30. **5th International Symposium on Molecular Materials**, Barcelona, Spain, July 2012. "Controlling Surface Properties of Metal Oxide Nanoparticles using Polymer Brushes" (Poster)
31. **Gordon Research Conference**, Colloidal, Macromolecular & Polyelectrolyte Solutions, Ventura, CA, February 2012. "Controlling Surface Properties of Metal Oxide Nanoparticles using Polymer Brushes" (Poster)
32. **61st Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, March 2010. "Structural and Physiochemical Studies on Dasatinib Hydrate and Anhydrate" (Poster)
33. **The University of Michigan AGEP Scholar Seminar Series (MASS)**, University of Michigan, Ann Arbor, MI, July 2009. "Structural and Physiochemical Studies on Dasatinib Hydrate and Anhydrate" (Oral)
34. **Scientific Update Conferences- Process Analytical Technologies in Organic Process R&D**, Brussels, Belgium, March 2009. "Polymorphs and Hydrates of Acyclovir" (Poster)
35. **Scientific Update Conferences- Process Polymorphism & Crystallization**, Brussels, Belgium, March 2009. "Polymorphs and Hydrates of Acyclovir" (Poster)
36. **American Chemical Society National Meeting**, Chicago, IL, March 2007. "Study of the Formation of Self-Assembled Monolayers on Nitinol" (Poster)
37. **Society of Biomaterials National Meeting**, Pittsburgh, PA, April 2006. "Study of the Formation of Self-Assembled Monolayers on Nitinol" (Poster)
38. **Spectroscopy Society of Pittsburgh-Mass spectrometry**, Pittsburgh, PA, December 2006. "An approach to differentiating between multi- and monolayers using MALDI-TOF MS" (Oral)

External Funding

Oct. 2022	Research Challenge Grant (RCG) in collaboration with West Virginia University and funded by WV higher education policy commission (\$100,000, 5 yrs), 2023– 2028
Aug. 2018	NSF Major Research Instrumentation (MRI) Grant for a Field Emission Scanning Electron Microscopy (\$399,999. 3 yrs)
May 2018	West Virginia EPSCOR NASA SEED Grant (\$10,000, 1 yr), 2018 – 2019
Oct. 2017	Research Challenge Grant (RCG) in collaboration with West Virginia University and funded by WV higher education policy commission (\$100,000, 5 yrs), 2018– 2022
May 2016	West Virginia EPSCOR NASA SEED Grant (\$10,000, 1 yr), 2016 – 2017
May 2013	West Virginia HEPC Mini – Grant (\$5,000, Summer 2013)

Awards, Certifications, and Fellowships

Nov. 2018, 2022	Phi Kappa Phi Love of Learning Award
Feb. 2021	Recognition for making student success a reality certificate from Marshall University Office of Student Success
May 2018	Distinguished Scholar and Art Award (DASA) of the year as Junior Faculty, Marshall University, WV
July 2017	Gordon Research Conferences' Predominantly Undergraduate Institution (PUI) Fund to attend the 2017 Dynamics at Surfaces GRC: 07/30– 08/04/2017
April 2017, 2022	Quinlan Endowment Fund sponsored by Marshall University, Huntington, WV
April 2016, 2022	INCO Foundation Educational Award sponsored by Marshall University, Huntington, WV
July 2015 – 2017	WV Family Travel Fund sponsored by the Division of Science and Research at the Higher Education Policy Commission (HEPC), WV State Grant
May 2015	Passer Award sponsored by ACS Division of Chemical Education
Oct. 2014 – 2022	NASA Research Enhancement Travel Award, Huntington, WV
May 2014, 2015	Faculty in Residence of the Year Award, Housing and Residence Life, Marshall University, Huntington, WV
May 2014, 2016, 2017, 2018	Marshall University (MU) Faculty ADVANCE Travel Award, Huntington, WV

May 2013	Research Honor Award in Chemistry for Kate Rodriguez who graduated from Washington and Jefferson College
March 2012, 2013	Honorable Mention Award, Research abstract submission for CUR's Posters on the Hill Symposium, Council on Undergraduate Research (CUR), Washington, D.C.
Feb. 2012	Carl Storm Underrepresented Minority (CSURM) Fellowship, Participation in 2012 Colloidal, Macromolecular & Polyelectrolyte Solutions GRC, Ventura, CA
2011 – 2013	National Science Foundation (NSF) Postdoctoral Research Fellow, Washington & Jefferson College, Washington, PA
May 2010	2010 Biotechnology Minority Fellowship, Biotechnology Institute, Arlington, VA
2008 – 2010	Alliance for Graduate Education and the Professoriate (AGEP) Postdoctoral Research Fellowship, University of Michigan, Ann Arbor, MI
2004 – 2008	Bayer Fellowship, Ph.D. Graduate Studies, Duquesne University, Pittsburgh, PA

Workshops and Conferences Attended

June 2022	Crystal Engineering, Gordon Research Conference, Newry, ME
June 2022	11 th international colloid conference, Lisboa, Portugal
May 2022	Cannabis science conference, Long Beach, CA
April 2022	Society of Toxicology, San Diego, CA
Feb. 2020	American Academy of Forensic Sciences, Anaheim, CA
July 2019	14 th material chemistry conference from the Royal society of Chemistry, Birmingham, UK
2019, 2014	American Chemical Society Institute, TX, GA
July 2017	Active Learning in Analytical Chemistry, sponsored by the National Science Foundation (NSF), Indiana University, IN
July 2017	Dynamics at Surfaces, Gordon Research Conference, Salve Regina University, Newport, RI
June 2016	Chemistry Collaborations, Workshops and Community of Scholars (cCWCS) workshop: Art as Context for General Chemistry, Sponsored by the NSF, Wall Walla, WA
April 2016	Postdoc to PUI Professor (P3) Workshop, Early-Faculty mentor, Sponsored by the American Chemical Society (ACS), Greenville, SC
July 2015	Chemistry Collaborations, Workshops and Community of Scholars (cCWCS) workshop: Materials Science and Nanotechnology, sponsored by the NSF, Beloit, WI
Dec. 2014	National Science Foundation (NSF) Day, sponsored by the NSF, Baltimore, MD
Nov. 2014	Beginning a Research Program in the Natural Sciences at a Predominantly Undergraduate Institution Institute, sponsored by Council on Undergraduate Research, Greensboro, NC
Feb. 2012	Colloidal, Macromolecular & Polyelectrolyte Solutions, Gordon Research Conference, Four Points Sheraton / Holiday Inn Express, Ventura, CA
April 2011	First Biennial Midwest "Preparing Postdocs for Undergraduate Faculty Careers in Chemistry", "Postdoc to PUI Prof" Workshop, sponsored by the American Chemical Society (ACS) and National Science Foundation (NSF), Hope College, Holland, MI
April 2010	Michigan AGEP Scholars Seminar (MASS) 2010 Research Symposium titled "Impacts of Research on a Diverse Society", Sponsored by Alliance for Graduate Education and the Professoriate (AGEP), University of Michigan, Ann Arbor MI
Oct. 2009	16 th Annual Compact for Faculty Diversity Institute on Teaching and Mentoring Compact for Faculty Diversity C/O SREB-State Doctoral Scholars Program, Representing the Alliance for Graduate Education and the Professoriate (AGEP), sponsored by the National Science Foundation (NSF), Arlington, VA
May 2009	Michigan AGEP Alliance Writing Spring Conference, University of Michigan, Ann Arbor MI
Oct. 2008	Preparing Future Faculty Conference: Getting Ready for an Academic Career, sponsored by Rackham Graduate School, the Career Center, the Center for the Education of Women, and Center for Research on Learning and Teaching (CRLT), University of Michigan, Ann Arbor MI

Professional Affiliations

- Honor Society of Phi Kappa Phi (nominated and endorsed), Member, 2018 – Present
 - Communications Officer, 2000 – 2022

- American Chemical Society, Member, 2000 – Present
 - ACS Division of Colloid and Surface Chemistry, Member-at Large (2020 and 2023- 3yr appointed), Active Member and Poster Judge
- Central Ohio Valley ACS (COVACS) Section, 2013 – Present
 - Councilor (2023 – 2026)
 - Alternate Councilor (3 yr term, 2019-2022)
 - Elect-Chair (2020)
 - Chair Elect (2014, 2018)
 - Former Chair (2015)
 - Nominating Committee Chair (2016-2017)
- Alpha Chi Sigma Professional Fraternity, Member, 2014 – Present
- Sigma Delta Epsilon, Graduate Women in Science (GWIS), Member, 2015 – 2020
 - Fellowship Reviewer
 - GWIS Public Relations Committee member
- American Association of University Women (AAUW), Member, 2015 – 2020
- Spectroscopy Society of Pittsburgh, Member, 2006 – 2018

Service

- Society of Toxicology – Undergraduate Faculty Advisor, March 2022, San Diego, CA
- Faculty senate member, Marshall University College of Science, 2022 – 2022.
- Mentor and judge of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) and Annual Biomedical Research Conference for Minority Students (ABRCMS) organizations, 2019 – Present.
- American Chemical Society ACS Bridge Project, mentor, 2020 and 2021.
- Co-Director of WV Science Olympiad and organizer of the Chemistry and Forensic competitions, February 2015 – Present.
- Faculty Advisor for the MU Optometry Club, Fall 2015 – 2020.
- Intel International Science and Engineering Fair, Chemistry High School Judge, Pittsburgh, PA, 2012, 2015, 2018, and 2021.
- Judged chemistry category at Chesapeake Science Fair, Lawrence County Science Fair, District 14 Ohio Science Fair 2017 – Present.
- Faculty panelist, “Postdoc to Faculty Workshop” (P2F, invited) at the ACS National Meetings, August 2014, 2015, 2016, 2017, 2018, 2019, and 2020.
- Early faculty panelist, Postdoc to PUI Professor Workshop (P3, invited), 2016 and 2018.
- Member of search committee: Stockroom Manager, Residence Director, Vice President of Student Affairs, Chemistry Faculty.
- Referee/Reviewer: *Applied Science*, *ACS Applied Materials & Interfaces*, *Chemical Research in Toxicology*, *Crystals*, *Inorganic Chemistry*, *Industrial & Engineering Chemistry Research*, *Journal of Pharmaceutical and Biomedical Analysis*, *Journal of Chemical Education*, *Langmuir*, *Materials*, *National Science Foundation (NSF)*, *ACS Petroleum Research Fund (PRF)*.
- Seminar, internship, and capstone coordinator of the Chemistry Department, Fall 2014 – Summer 2017.
- Usher, Marshall University Spring Commencement, May 2014, 2015, 2016, 2017, 2018, 2019, and 2021.
- West Virginia Academy of Science, Chemistry department member, April 2016.
- You Be The Chemist® Challenge Content Development Team, Chemical Educational Foundation (CEF), November 2013 – 2020.
- Faculty – in Residence at Holderby, Buskirk, and Twin Tower West Residence Halls, Marshall University, August 2013 – July 2016.
- Faculty speaker (invited), Outstanding Intercultural Students Weekend, Sponsored by Academic Affairs, November 2014, 2015 and 2016.
- 73rd, 74th and 76th Pittsburgh Regional Science and Engineering Fair (PRSEF), Chemistry Intermediate Judge, Pittsburgh, PA, March, 2012, 2013, and 2015.

- 1st Science Fair, chemistry elementary Judge, Young Scholars of Western PA Charter School, Pittsburgh, PA, May 9, 2012.

Technical Proficiency

- Expertise in analytical and instrumental characterization using: FT-IR, MALDI-TOF MS, AFM, ICP-OES, HPLC, AAS, Contact angle measurements, UV-Vis spectroscopy, Raman spectroscopy, cyclic voltammetry, spectrofluorometer, DSC, and TGA
- Experience using SS-NMR, NMR, GC, ESI-MS, PXRD, SEM, ellipsometer, DLS, zeta potential, and EIS
- Organic synthesis experience-hydrolysis, hydrogenation, hydroxamic acid formation, Michaelis–Arbuzov reaction
- Computer Knowledge: Windows, Microsoft Office, Chem. Finder, Chem. Pro, Graph Prism, Sigma Plot, Origin, Mercury, Jade, Area Max², LIMS, Adobe (Illustrator, Photoshop), Spartan, Gaussian 03, Gaussian View, Argus Lab, ACD/NMR Processor, Mercury, Material Studio, MetReNOVA-NMR, online course management tools (Sakai, Teams, and Blackboard)
- Oral and written communication skills in English and Spanish