



## MARILYN RAMPERSAD MACKIEWICZ, Ph.D.

Assistant Professor

Oregon State University, Department of Chemistry  
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Website: [Laboratory of Nanostructured Materials](#)

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### EDUCATION

Post-Doctoral Scholar: Nanomaterials Chemistry, 2007, Portland State University, Portland, OR

Advisor: Scott M. Reed

Ph. D., Chemistry, December 2005, Texas A & M University, College Station, TX  
Dissertation title: "Development of Metallodithiolate Complexes as Bidentate Ligands of Use to Organometallic Chemistry."

Advisor: Prof. Marcetta Y. Darensbourg

B. A., Chemistry, June 2001, Hunter College the City University of New York

Advisor: Lynn C. Francesconi

B.A., Psychology, June 1999, Hunter College the City University of New York

### ACADEMIC APPOINTMENTS AND PROFESSIONAL HISTORY

- Research Assistant Professor, Portland State University, 2010-2020
- Adjunct Professor and Instructor, Portland State University, 2017-2020
- Assistant Professor in Chemistry, Oregon State University, 2020-present

### PROFESSIONAL OBJECTIVES

- Design engineered nanomaterials to advance their clinical translation in medicine
- Increase strategic research partnerships for interdisciplinary research and translational industrial and clinical applications
- Build and sustain diverse and inclusive research environments and training programs to engage and support underrepresented students in STEM
- Implement and integrate culturally relevant pedagogical practices and professional development skills in research practices and teaching

### RESEARCH INTERESTS

- Using green synthetic methodologies to engineer sustainable nanostructured materials for biomedical, environmental, and commercial applications including
  - Gold nanomaterials for optical and drug delivery agents for cancer, macular degeneration, and glaucoma
  - Nickel nanoprobos for subcellular organelle labeling for X-ray fluorescence imaging, catalysis, and other bioimaging
  - Silver nanomaterials for use as anti-viral and anti-bacterial agents
- Study nanobiological-biological interactions (NBI's) to understand their impact of nanomaterials on human health and the environment
- Understanding the toxicological effects of beta-amyloid and the effect of small molecules in reversing protein aggregation as candidates for Alzheimer's treatment
- Build and sustain diverse and inclusive research environments and training programs to engage and support underrepresented students in STEM

- Increase strategic research partnerships for interdisciplinary research and translational industrial and clinical applications
- Implement and integrate culturally relevant pedagogical practices and professional development skills in research practices and teaching

## RESEARCH TOOLS OF INTEREST AND SPECIALITY

Investigations in my areas of research require the use of a variety of techniques including high pressure and variable temperature nuclear magnetic resonance (NMR) spectroscopy, UV-vis-NIR, infrared spectroscopy, reflectance spectroscopy, single-crystal X-ray crystallography, air-sensitive techniques, thermogravimetric analysis, mass spectrometry, cyclic voltammetry, spectroelectrochemistry, SEM, dynamic light scattering, confocal microscopy, atomic force microscopy, transmission electron microscopy (TEM), cell culture techniques, confocal microscopy, and fluorescence spectroscopy.

## AFFILIATIONS AND PROFESSIONAL SOCIETIES

- Textbook and Teachers Association, 2019-present
- IEEE Nanotechnology Chapter member, 2019-present
- Sigma XI, member, 2014-present
- American Chemical Society, member, 2001-present
- American Chemical Society, Inorganic Division member, 2001-present
- American Chemical Society, Colloidal Division member, 2018-present
- ONAMI: Oregon Nanoscience and Microtechnologies Institute 2010-present
- OHSU Biology of Neurodegeneration group (BOND), 2014-present

## CURRENT COLLABORATIONS

- **Portland State University**
  - Department of Biology-Kenneth Stedman
  - Department of Biology-Michael Bartlett
- **Oregon Health and Science University**
  - Casey Eye Institute-David Huang
  - Department of Dermatology-Pamela Cassidy
  - Oregon Primate Center-Trevor McGill
  - Molecular & Medicinal Genetics- Martina Ralle
  - Department of Cell Biology-Philip Copenhaver
  - Department of Cell Biology-Vivek Uni
- **Legacy Hospital**
  - Devers Eye Institute-Brad Fortune
- **Oregon State University**
  - Environmental and Molecular Toxicology-Stacey Harper
  - Chemical, Biological, and Environment Engineering-Joe Baio
- **University of Tennessee, Knoxville**
  - Department of Chemistry- Craig E. Barnes
- **Indiana School of Medicine**
  - Biochemistry and Molecular Biology-Ann Kimble-Hill
  - Medical & Molecular Genetics-Jason Meyer

## FUNDING

### Pending:

NSF NRT (Total DC to Mackiewicz = \$3000,000)

Mackiewicz (PI) 04/1/2021 to 03/31/2027  
NRT-AI: Intelligent Chemical Discovery, Synthesis, and Processing.

NSF: Career Award (Total DC to Mackiewicz = \$557,693)  
Mackiewicz (PI) 04/1/2021 to 03/31/2026  
Engineering Hybrid Lipid-coated Nanomaterials for Bioimaging and Retinal Cell-labeling

Cottrell Scholar Award (Total DC to Mackiewicz = \$100,000)  
Mackiewicz (PI) 03/30/2022 to 04/1/2025  
Nanomaterials for Ophthalmology Applications: Determining how the physicochemical features of nanoparticles interface with ocular environments

NIH: NIBIB R21 (Total DC to Mackiewicz = \$632,680)  
Mackiewicz (PI) 04/1/2025 to 05/30/2025  
A Nanoparticle-based Tracer to Study Axonal Transport in Glaucoma Models

#### Current:

OSU Murdoch Trust Doug Kesler (Total DC for Project = \$1,114,406) (PI), Mackiewicz (co-I), Stylianou (co-I), Nyman (co-I), Carter (co-I) 01/1/2021-present  
Controlled Flow Processing Center

OSU Disease Mechanism Fund (Total DC= \$10,000)  
Mackiewicz (PI) 03/01/2022 – present  
Robust Lipid-coated Silver Nanoparticles for Diagnosis of Triple-Negative Breast Cancer Using X-ray Computer Tomography Imaging

Private Donor (Total DC= \$30,000)  
Mackiewicz (PI) 01/01/2018 – present  
Supporting Research in Alzheimer's Disease at Portland State University

NSF: CBET NSF REU Supplement (Total DC to Mackiewicz = \$20,000)  
Mackiewicz (PI) 04/01/2019 – 03/31/2022  
NSF REU supplement to support undergraduate research experiences and development in scientific and professional identities in STEM.

NIH NIGMS (Total DC = \$250,000, DC to Mackiewicz = \$102,477)  
Ralle (OHSU, PI) Mackiewicz (co-I) 04/01/2019 – 03/31/2021  
Development of novel markers to contextualize X-ray fluorescence microscopy

NSF: CBET (Total DC = \$544,000, DC to Mackiewicz = \$244,555)  
Mackiewicz (PI on Collaborative proposal) 04/15/2018 – 03/31/2021  
Teasing apart how specific nanoparticle features relate to environmental fate and contribute to ecotoxicity

#### Prior Support:

PSU NIH BUILD EXITO RLC Support (internal, DC to Mackiewicz = \$27,000)  
Mackiewicz (PI) 08/01/2017 – 06/30/2019  
Supporting Undergraduate Research Experiences in Nanomaterials Development.

NSF (Total DC = \$10,000)  
Mackiewicz (PI) 10/14/2018 – 10/17/2018

IEEE Nano Materials & Devices Conference - NMDC-2018

Murdock Charitable Trust (Instrument Purchase)

Robert Perkins (PI) and Mackiewicz (co-PI) 02/01/2016 – 12/31/2016  
Acquisition of an Inductively Coupled Plasma Mass Spectrometer at Portland State University

PSU Faculty Enhancement Grant (Total DC = \$15,000)

Mackiewicz (PI) 07/01/2015 – 06/30/2018  
Image-guided Drug Delivery (IGDD) Agents for Cancer Therapy

PSU NIH BUILD EXITO Pilot Project (Total DC to Mackiewicz \$50,000)

Mackiewicz (PI) 07/01/2016 – 06/30/2017  
Surface Modification of Gold Nanorods as Enhanced Contrast Agents for *in vivo* Optical Coherence Tomography Imaging (Pilot Grant)

American Chemical Society Project SEED grant (DC = \$7,500)

Mackiewicz (PI) 07/01/2016 – 08/31/2016  
Robust Hybrid Membrane-coated Nanoparticles for Drug Delivery and Imaging  
Collins Medical Trust (Total DC to Mackiewicz = \$30,000)  
Marilyn R Mackiewicz (PI) 07/01/2013– 05/30/2015  
Effects of Metals and Chelators in Beta Amyloids Aggregation

PSU Faculty Enhancement Grant (Total DC to Mackiewicz \$8,000)

Marilyn R. Mackiewicz (PI) 07/01/2011 -06/31/2013  
Investigating the Role of Nanoparticles as Electron Mediators in Bioinspired Nanostructured Catalysts

OHSU Medical Research Foundation (Total DC to Mackiewicz \$75,000)

Marilyn R Mackiewicz (PI) 07/01/2010 -06/01/2011  
Designing Multifunctional Nanoparticles with Phytochelatin Cysteine-rich Peptides for Metal Sensing and Nanochelation Therapies

Office of Naval Research (DC to Mackiewicz \$4,000)

Marilyn R. Mackiewicz (subcontract) 09/01/2010- 12/31/2012  
Enhanced Biochemical Imaging Enabled by Holographic Optical Tweezers

Ruth L. Kirschstein-NRSA (NIH) Training Grant (Total DC =\$45,488)

Mackiewicz (PI) 09/07/2004 – 08//30/2005  
Development of Metal Complexes as Bidentate Ligands

## PATENTS

- *Lipid-Coated Nanoparticles and Methods of Making and Using the Same*, United States Provisional Patent 62/307,395 filed 3-11-2016
- *Hybrid Membrane-Coated Nanoparticle Composites and Methods of Making and Using the Same* PCT Patent US17/21880 filed 3-10-2017
- *Hybrid Membrane-Coated Nanoparticle Composites and Methods of Making and Using the Same* US Patent 16/127,013 filed 9-10-2018
- **Licensed:**
  - Kerafast for commercialization, September 1<sup>st</sup>, 2017-present

## PUBLICATIONS

**Mackiewicz, M.R.**; Mason, D.; and Ajarapu, R. "Integrating Asset-based PD Skills in Research Environments to Build Strong Scientific and Professional Underrepresented Student Identities", *J. Chem. Ed.* (2021), (resubmitted for peer review).

Marquart, G. M. S., J.; McGill, T.J.; Kinnison, K.; Zhou, F.; Hugo, R.; Ryals, R.; Schubert, S.; **Mackiewicz, M.R.** The Impact of Surface Chemistry on Gold Nanorod Uptake in Stem Cell-derived Therapeutic Cells. *ChemRxiv.* (2021) Preprint. <http://doi.org/10.33774/chemrxiv-2021-fhcv5>

Cunningham, B.; Engstrom, A. M.; Harper, B. J.; Harper, S. L.; **Mackiewicz, M. R.**, Silver Nanoparticles Stable to Oxidation and Silver Ion Release Show Size-Dependent Toxicity In Vivo. *Nanomaterials* (2021), 11 (6), 1516.

Marriott, L. K.; Raz Link, A.; Anitori, R. P.; Blackwell, E. A.; Blas, A.; Brock, J.; Burke, T. K.; Burrows, J. A.; Cabrera, A. P.; Helsham, D.; Liban, L. B.; **Mackiewicz, M. R.**; Maruyama, M.; Milligan-Myhre, K. C. A.; Panelinan, P. J. C.; Hattori-Uchima, M.; Reed, R.; Simon, B. E.; Solomon, B.; Trinidad, A. M. O.; Wyatt, L. R.; Delgado Covarrubias, A.; Zell, A.; Keller, T. E.; Morris, C.; Crespo, C. J., Supporting Biomedical Research Training for Historically Underrepresented Undergraduates Using Interprofessional, Nonformal Education Structures. *Journal of the Scholarship of Teaching and Learning* (2021), 21 (1).

Engstrom A. M; F. R., Marquart G. W; Baio J.E; **Mackiewicz M.R**; Harper S.L. Size-Dependent Interactions of Lipid-Coated Gold Nanoparticles: Developing a Better Mechanistic Understanding Through Model Cell Membranes and in vivo Toxicity. *Int J Nanomedicine.* (2020),15:4091-4104.

Engstrom, A. M.; Wu, H.; **Mackiewicz, M. R.**; Harper, S. L. (2020) Controlling Silver Ion Release of Silver Nanoparticles with Hybrid Lipid Membranes with Long-Chain Hydrophobic Thiol Anchors Decreases in vivo Toxicity, *IJERA* (2020),10:12-28.

Miesen, T.J.; Engstrom, A. M.; Frost, D.C.; Ajarapu, R.; Ajarapu, R.; Nieves Lira, C.; **Mackiewicz, M.R.** (2020) Hybrid lipid-membrane coating "shape-lock" silver nanoparticles to prevent surface oxidation and silver ion dissolution. *RSC Advances*, 10, 15677-15693.

Aggarwal, A.; Samaroo, D.; Jovanovic, I. R.; Singh, S.; Tuz, M. P.; **Mackiewicz, M. Rampersad**, (2019) Porphyrinoid-based photosensitizers for diagnostic and therapeutic applications: An update. *Journal of Porphyrins and Phthalocyanines* 0 (0), 1-37.

Virca, C. N.; Winter, H. M.; Goforth, A. M.; **Mackiewicz, M. Rampersad**; McCormick, T. M., (2017) Photocatalytic water reduction using a polymer-coated carbon quantum dot sensitizer and a nickel nanoparticle catalyst. *Nanotechnology*, 28 (19), 195402.

Hamilton, D. J.; Cai, Y.; Kaur, R.; Marquart, G. W.; **Mackiewicz, Marilyn Rampersad**; Reed, S. M., (2017) Lipid-Coated Gold Nanoparticles as Probes for Membrane Binding. Humana Press: Totowa, NJ, pp 1-16

Ho Wu, R.; Nguyen, T.P.; Marquart, G. M.; Miesen, T. J.; Mau, T.; **Mackiewicz, M. Rampersad**, "(2014) "A facile route to tailoring peptide-stabilized gold nanoparticles using glutathione as a synthon." *Molecules* 19 (5):6754-75.

Sinche, F., Ho Wu, R., Gowrishankar, M., Marquart, G. W., **Mackiewicz, M. Rampersad**, Harper, B., and S. L. Harper. (2013) "The impact of the synthesis method and purity on the toxicity of glutathione-coated gold nanoparticles." *Nanomaterials* 4 (2), 355-371.

Norris, C.; Rencit, P. R.; Mackiewicz, M. Rampersad; Reed, S. M. (2010) "A Simple Synthesis of Gold-Core, Silver-Shell Nanoparticles Using Minimal Formaldehyde." *Chemistry of Materials*, 22 (12), 3637–3645.

Mackiewicz, M. Rampersad.; Hodges, H. L.; Brown, A. L.; Reed, S. M. (2010) "Nanoparticle-Enhanced Assay for Detection of C - reactive Protein with Phosphatidylcholine ligands." *Journal of Physical Chemistry B*, 114 (16), 5556–5562.

Situala, S.; Mackiewicz, M. Rampersad; Reed, Scott M. (2008) "Gold Nanoparticles Become Stable to Cyanide Etch when Coated with Hybrid Lipid Bilayers." *Chemical Communications*, 3013–3015.

Mackiewicz, M. Rampersad; Ayres, Benjamin R.; Reed, Scott M. (2008) "Reversible, Reagentless Solubility Changes in Phosphatidylcholine-stabilized Gold Nanoparticles." *Nanotechnology*, 19, 115607-115613.

Rampersad, Marilyn V.; Zuidema, Eric; Ernsting, Jan Meine; van Leeuwen, Piet W. N. M.; Darensbourg, Marcetta Y. (2007) "CO and Ethylene Migratory Insertion Reactions and Copolymerization Involving Palladium Complexes of a NiN<sub>2</sub>S<sub>2</sub> Metallodithiolate Ligand." *Organometallics*, 26 (4), 783-792.

Phelps, Andrea L.; Rampersad, Marilyn V.; Fitch, Shawn B.; Darensbourg, Donald J.; Darensbourg, Marcetta Y. (2006) "Kinetic Study of the Ring-Opening Process in Tungsten Carbonyl Complexes Containing Hemilabile Metallodithiolate Ligands." *Inorganic Chemistry*, 45 (1), 119-126.

Jeffery, Stephen P.; Green, Kayla N.; Rampersad, Marilyn V.; Darensbourg, Marcetta Y. (2006) "NiN<sub>2</sub>S<sub>2</sub> Complexes as Metallodithiolate Ligands to Rh<sup>I</sup>, Rh<sup>II</sup>, and Rh<sup>III</sup>." *Dalton Transactions*, 35, 4244-4252.

Rampersad, Marilyn V.; Jeffery, Stephen P.; Reibenspies, Joseph H.; Ortiz, Cesar G.; Darensbourg, Donald J.; Darensbourg, Marcetta Y. (2005) "N<sub>2</sub>S<sub>2</sub>Ni Metallodithiolates as a Class of Ligands that Support Organometallic and Bioorganometallic Reactivity." *Angew. Chem., Int. Ed.*, 44, 1217-1220.

Golden, Melissa L.; Whaley, Curtis M.; Rampersad, Marilyn V.; Reibenspies, Joseph H.; Hancock, Robert D.; Darensbourg, Marcetta Y. (2005) "N<sub>2</sub>S<sub>2</sub>Ni Metallodithiolate Complexes as Ligands: Structural and Aqueous Solution Quantitative Studies of the Ability of Metal Ions to Form M-S-Ni Bridges to Mercapto Groups Coordinated to Nickel(II): Implications for Acetyl Alzheimer's Synthesis." *Inorganic Chemistry*, 44(4), 875-883.

Golden, Melissa L.; Rampersad, Marilyn V.; Reibenspies, Joseph H.; Darensbourg, Marcetta Y. (2003) "Capture of Ni<sup>II</sup>, Cu<sup>I</sup> and Zn<sup>II</sup> by Thiolate Sulfurs of an N<sub>2</sub>S<sub>2</sub>Ni complex: A role for a Metallothiolate Ligand in the Acetyl-coenzyme A Synthase Active Site." *Chemical Communications*, 15, 1824-1825.

Zhao, Xuan; Chiang, Chao-Yi; Miller, Mathew L.; Rampersad, Marilyn V.; Darensbourg, Marcetta Y. (2003) "Activation of Alkenes and H<sub>2</sub> by [Fe]-H<sub>2</sub>ase Model Complexes." *Journal of the American Chemical Society*, 125, 518-524.

Efange, Simon M. N.; Tu, Zhude.; von Hohenberg, Krystyna.; Francesconi, Lynn C.; Howell, Roberta C.; Rampersad, Marilyn V.; Todaro, Luis. J.; Papke, Roger. L.; Kung, Mei-Ping. (2001) "2-(2-Piperidyl)- and 2-(2-Pyrrolidyl)chromans as Nicotine Agonists: Synthesis and Preliminary Pharmacological Characterization." *Journal of Medicinal Chemistry*, 44, 4704-4715.

## SELECTED PRESENTATIONS

### ORAL

*Seminar Oregon State University-Engineering*, 23<sup>rd</sup>, 2021, Mackiewicz, Marilyn Rampersad, "Engineered Nanomaterials for Labeling Retinal Cells and Bioimaging" Design." (Invited)

42<sup>nd</sup> *Society of Environmental Toxicity and Chemistry*, November 14<sup>th</sup>, 2021, Mackiewicz, Marilyn Rampersad, "Inclusive Leadership, Power Dynamics and Communication" (Invited Plenary Speaker).

259<sup>th</sup> *American Chemical Society Meeting*, April 6<sup>th</sup>, 2021, Virtual Mackiewicz, Marilyn Rampersad, "Solving the mystery between silver and silver nanoparticles: Who's toxic?" Design." (Invited)

*Seminar Indiana School of Medicine*, April 26<sup>th</sup>, 2021, Mackiewicz, Marilyn Rampersad, "Evolving Nanotechnologies for Advancing the Field of Ophthalmology" Design." (Invited)

*Seminar Pacific University*, November 17<sup>th</sup>, 2020, Mackiewicz, Marilyn Rampersad, "Evolving Nanotechnologies for Advancing the Field of Ophthalmology" Design." (Invited)

*Seminar Oregon State University-Physics Department*, November 30<sup>th</sup>, 2020, Virtual Mackiewicz, Marilyn Rampersad, "Evolving Nanotechnologies for Advancing the Field of Ophthalmology" Design." (Invited)

*Seminar Queens University*, March 7<sup>th</sup>, 2020, Mackiewicz, Marilyn Rampersad, "Inclusive Leadership: Your Role in Creating Cultures of Belonging Where Everyone can Thrive" Design." (Invited)

*Seminar Oregon State University*, August 29<sup>th</sup>, 2020, Mackiewicz, Marilyn Rampersad, "Evolving Nanotechnologies for Advancing the Field of Ophthalmology" Design." (Invited)

259<sup>th</sup> *American Chemical Society Meeting*, April 6<sup>th</sup>, 2021, Virtual Mackiewicz, Marilyn Rampersad, "Solving the mystery between silver and silver nanoparticles: Who's toxic?" Design." (Invited)

74<sup>th</sup> American Chemical Society Northwest Regional Meeting, June 17<sup>th</sup>, 2019, Portland, OR. Mackiewicz, Marilyn Rampersad; Sawab, H.; Engstrom, A. M.; Faase, R.; Baio, J.; Harper, S. L. "Tuning the Curvature of Hybrid Lipid-coated Gold Nanoparticles to Investigate Toxicity."

74<sup>th</sup> American Chemical Society Northwest Regional Meeting, June 17<sup>th</sup>, 2019, Portland, OR. Mackiewicz, Marilyn Rampersad; Sawab, H.; Engstrom, A. M.; Faase, R.; Baio, J.; Harper, S. L. "Evolving Nanotechnologies for the Ophthalmology Applications."

Seminar American Chemical Society Local Section Portland, March 15<sup>th</sup>, 2019, Portland, OR. Mackiewicz, Marilyn Rampersad "Seeing Gold: Evolving Nanotechnologies for Advancing the Field of Ophthalmology" (Invited)

256<sup>th</sup> American Chemical Society Meeting, August 19<sup>th</sup>, 2018, New Orleans, LA. Mackiewicz, Marilyn Rampersad, "Engaging Nanoparticle-Cell Interactions through "Smart" Design."

73<sup>rd</sup> American Chemical Society Northwest Regional Meeting, June 24<sup>th</sup>, 2018, Richland, WA. Mackiewicz, Marilyn Rampersad, "Integrating Professional Development into Research Experiences" (Invited)

Workshop Texas A and M University, May 19<sup>th</sup>, 2018, College Station, TX. Mackiewicz, Marilyn Rampersad, "Just Ask for it: Effective Negotiation" (Invited Oral presentation).

Seminar Texas A and M University, May 18<sup>th</sup>, 2018, College Station, TX. Mackiewicz, Marilyn Rampersad, "Using Tiny Pieces of Gold to Visualize Stem Cells" (Invited)

255<sup>th</sup> American Chemical Society Meeting, March 22<sup>nd</sup>, 2018, New Orleans, LA. Mackiewicz, Marilyn Rampersad, "Nanomaterials for enhancing the resolution of optical coherence tomography in the retina"

255<sup>th</sup> American Chemical Society Meeting, March 22<sup>nd</sup>, 2018, New Orleans, LA. Adams, E. K.; and Mackiewicz, Marilyn Rampersad, "Metallothiolate Ligands for Reversing Metal Ion Induced Aggregation of Beta-Amyloid"

Society of Neuroscience, March 22<sup>nd</sup>, 2018, New Orleans, LA. Adams, E. K.; and Mackiewicz, Marilyn Rampersad, "Metallothiolate Ligands for Reversing Metal Ion Induced Aggregation of Beta-Amyloid"

252<sup>nd</sup> American Chemical Society Meeting, August 21<sup>st</sup>, 2016, Philadelphia, PA. Grant M. Marquart and Mackiewicz, Marilyn Rampersad, "Surface Modification of Gold Nanorods as Enhanced Contrast Agents for *in vivo* Optical Coherence Tomography Imaging"

Ronald E. McNair Scholars, Feb 14, 2014, Portland, OR. Mackiewicz, Marilyn Rampersad, "A Guide to Development of Scientific Methodology" (Invited)

Louis Stokes National Alliance for Minority Participation, Feb 16, 2014, Portland, OR. Mackiewicz, Marilyn Rampersad, "A Scientist First, then a Minority: Using Your Diversity as Motivation to Lead Interdisciplinary Research"



*246th American Chemical Society Meeting*, September 8th, 2013, Indianapolis, IN. Mackiewicz, Marilyn Rampersad, "Effect of metal ions and chelators in modulating beta-amyloid aggregation and binding to biomimetic lipid-coated gold nanoparticles"

*242<sup>nd</sup> American Chemical Society Meeting*, August 29th, 2011, Denver, CO. Mackiewicz, Marilyn Rampersad, "Biocompatible nanochelators surface-functionalized with phytochelatin peptide derivatives for metal chelation studies."

*NORM172 ACS Northwest Regional Meeting*, June 29th, 2011, Portland, OR. Mackiewicz, Marilyn Rampersad, "Phytochelatin-based Gold Nanochelators for Metal Ion Detection and Chelation Studies"

*Seminar at Oregon State University*, February 9<sup>th</sup>, 2011, Corvallis, OR. Mackiewicz, Marilyn Rampersad, "Nanoparticles as Mimics of Biological Membrane Structures."

*Seminar at Colorado School of Mines and NREL*, March 9<sup>th</sup>, 2010, Golden, CO. Mackiewicz, Marilyn Rampersad; Reed, S. M. "Designing Nanoscale Architectures for Nanosensor Development."

*Seminar at Michigan State University*, January 26<sup>th</sup>, 2009, Lansing, MI. Mackiewicz, Marilyn Rampersad; Reed, S. M. "Nanoparticles as Mimics of Biological Membrane Structures for Detection of C-Reactive Protein. (Invited)"

*Seminar at the University of Colorado at Denver*, January 29<sup>th</sup>, 2009, Denver, CO. Mackiewicz, Marilyn Rampersad; Reed, S. M. "Nanoparticles as Mimics of Biological Membrane Structures for Detection of C-Reactive Protein. (Invited)"

*Seminar at University of Texas at San Antonio*, February 3<sup>rd</sup>, 2009, San Antonio, TX. Mackiewicz, Marilyn Rampersad; Reed, S. M. "Nanoparticles as Mimics of Biological Membrane Structures for Detection of C-Reactive Protein. (Invited)"

*Hunter College Recruitment Seminar*, October 26<sup>th</sup>, 2008. Hunter College, New York, NY. Rampersad, Marilyn V. "Development of NiN<sub>2</sub>S<sub>2</sub> Complexes as Bidentate Ligands for Organometallic Chemistry."

*Industry-University Cooperative Chemistry Program IUCCP Symposium*, October 18, 2004, Texas A & M University, College Station, TX. Rampersad, Marilyn V.; Jeffery, Stephen P.; Golden, Melissa L.; Darensbourg, Marcetta Y. (award winner best oral presentation). "Development of Metal Dithiolate Complexes as Bidentate Ligands for Organometallic Chemistry: Inspired by Acetyl CoA Synthase." (award winner best)

*Chemistry and Biology Interface Conference*, August 21, 2004, Texas A & M University, College Station, TX. Rampersad, Marilyn V.; Jeffery, Stephen P.; Golden, Melissa L.; Darensbourg, Marcetta Y. "Development of Metal Dithiolate Complexes as Bidentate Ligands for Organometallic Chemistry: Inspired by Acetyl CoA Synthase."

## **POSTER**

*256th American Chemical Society Meeting*, August 19th, 2018, Boston, MA. Sawab, H.; Ralle, M.; and Mackiewicz, Marilyn Rampersad, "Hybrid Design of Nickel Nanoparticles for X-Ray Fluorescence Microscopy to Visualize Cellular Metal Ion Concentrations" (Poster presentation).

256<sup>th</sup> American Chemical Society National Meeting and Exposition, August 19<sup>th</sup>, 2018, Boston, MA. Wu., H.; Demchenko. D.; Stedman, K. and Mackiewicz, Marilyn Rampersad, "Tuning the surface architecture of silver nanoparticles for use as anti-viral agents" (Poster presentation).

73<sup>rd</sup> American Chemical Society Northwest Regional Meeting, June 24<sup>th</sup>, 2018, Richland, WA. Sawab, H.; Ralle, M.; and Mackiewicz, Marilyn Rampersad, "Hybrid Design of Nickel Nanoparticles for X-Ray Fluorescence Microscopy to Visualize Cellular Metal Ion Concentrations" (Poster presentation).

73<sup>rd</sup> American Chemical Society Northwest Regional Meeting, June 24<sup>th</sup>, 2018, Richland, WA. Wu., H.; Demchenko. D.; Stedman, K. and Mackiewicz, Marilyn Rampersad, "Tuning the surface architecture of silver nanoparticles for use as anti-viral agents" (Poster presentation).

253<sup>rd</sup> American Chemical Society Meeting, April 2<sup>nd</sup>, 2017, San Francisco, CA. Miesen, T. J.; and Mackiewicz, Marilyn Rampersad, "Hybrid Lipid-coated Silver Nanoparticles Differentially Shielded from Ag ion Release" (Poster presentation).

251<sup>st</sup> American Chemical Society Meeting, March 15<sup>th</sup>, 2016, San Diego, CA. Sanchez, P. and Mackiewicz, Marilyn Rampersad, "Robust Hybrid Membrane-coated Nanoparticles for Targeting Tumors" (Poster presentation).

248<sup>th</sup> American Chemical Society Meeting, March 22 & 23, 2015, Denver, CO. Costa, Erica A.; Jorgenson, Brent D.; Mackiewicz, Marilyn Rampersad, "Modulating Beta-Amyloid Aggregation with Metal Ions and Nanochelators". (Poster presentation).

Society for Neuroscience Oregon Chapter Meeting, March 28, 2015, Portland, OR. Marquart, G. W.; Miesen, T. J.; and Mackiewicz, Marilyn Rampersad, "Biomimetic Membrane-coated Nanomaterials for Bioimaging and Protein Sensing" (Poster presentation).

Sigma Xi Columbia-Willamette Student Research Symposium, April 16, 2015, Portland, OR. Marquart, G. W.; Miesen, T. J.; and Mackiewicz, Marilyn Rampersad, "Biomimetic Membrane-coated Nanomaterials for Bioimaging and Protein Sensing" (Poster presentation, first place award for best poster).

Sigma Xi Columbia-Willamette Student Research Symposium, April 16, 2015, Portland, OR. Jorgenson, B. D.; Ajarapu, R. and Mackiewicz, Marilyn Rampersad, "Gold Nanoparticles as Heavy Metal Ion Capture Agents for Alzheimer's Disease and Cancer" (Poster presentation).

247<sup>th</sup> American Chemical Society Meeting, March 16<sup>th</sup>, 2014, Dallas, TX. Nguyen, T.; Mackiewicz, Marilyn Rampersad, "Nanochelators for sensing and targeting iron in cancer cells" (Poster presentation).

247<sup>th</sup> American Chemical Society Meeting, March 16<sup>th</sup>, 2014, Dallas, TX. Clifton, Molly; Mackiewicz, Marilyn Rampersad, "Site-directed nanochelators for reversing metal-induced protein aggregation" (Poster presentation).

*Society for Neuroscience Oregon Chapter Meeting* April 4<sup>th</sup>, 2014, Portland, OR. Clifton, Molly; Frost, D. C.; Aier, S. C.; Keller, J. R. Stanek, J. W. Mackiewicz, Marilyn Rampersad, "Modulating beta-amyloid aggregation with Metal Ions and chelators." (Poster presentation).

10<sup>th</sup> annual Sigma Xi Columbia-Willamette Student Research Symposium, April 15, 2014, Portland, OR. Nguyen, T. P.; Mackiewicz, Marilyn Rampersad, "Monitoring iron uptake onto gold nanoparticle surfaces for use as theranostic agents in cancer therapy" (Poster presentation, second-place award for best poster).

2014 Pacific Northwest McNair/EIP/GO-MAP Research Conference, May 16, 2014, Seattle, WA. Nguyen, T. P.; Mackiewicz, Marilyn Rampersad, "Monitoring iron uptake onto gold nanoparticle surfaces for use as theranostic agents in cancer therapy" (Poster presentation).

241<sup>st</sup> *American Chemical Society Meeting*, March 29<sup>th</sup>, 2011, Anaheim, CA. Mackiewicz, Marilyn Rampersad, Ho Wu, Rosina; Mau, Theresa; Azimi, Shauyaun; and Sinche, Federico. "Multifunctional biocompatible iron and gold nanomaterials for metal chelation applications." (Poster presentation).

3<sup>rd</sup> *Annual Greener Nanoscience*, March 10<sup>th</sup>, 2008, Hewlett-Packard, Corvallis, OR. Mackiewicz, Marilyn Rampersad; Sitaula, Sarita; Ayres, Benjamin R.; Reed, Scott M. "Lecithin-stabilized Gold Nanoparticles with Unique Phase Transfer Properties and their Reactivity to Thiol Exchange." (Poster presentation).

*International Conference on Biological Inorganic Chemistry*, July 31<sup>st</sup>, 2005. Ann Arbor, Michigan. Rampersad, Marilyn V.; Darensbourg, Marcetta Y. "Bioinspired Metallodithiolate Ligands To facilitate C-C Coupling Reactions at Palladium." (Poster presentation).

238<sup>th</sup> *American Chemical Society Meeting*, August 15<sup>th</sup>, 2009, Washington, DC. Mackiewicz, Marilyn Rampersad; Reed, Scott M. "C-reactive Protein Recognition by Phosphatidylcholine-stabilized Gold Nanoparticles." (Poster presentation).

229<sup>th</sup> *American Chemical Society Meeting*, March 13, 2004, San Diego, CA. Rampersad, Marilyn V.; Jeffery, Stephen P. Golden, Melissa L.; Ortiz, Cesar G.; Darensbourg, Donald J.; Darensbourg, Marcetta Y. "Development of Metal Dithiolate Complexes as Bidentate Ligands for Organometallic Chemistry Inspired by Acetyl-Coenzyme A Synthase." (Poster presentation).

36<sup>th</sup> *International Conference on Coordination Chemistry*, July 18-23, 2004, Mérida, Yucatán, México. Rampersad, Marilyn V.; Jeffery, Stephen P.; Golden, Melissa L.; Darensbourg, Marcetta Y. "Development of Metal Dithiolate Complexes as Bidentate Ligands for Organometallic Chemistry." (Poster presentation).

225<sup>th</sup> *American Chemical Society Meeting*, March 25, 2004, New Orleans, LA. Rampersad, Marilyn V.; Darensbourg, Marcetta Y.; Miller, Matthew L. "Synthesis and Structural Characterization of Heteronuclear Clusters Comprised of Nickel and Copper Bridged by Thiolates." (Poster presentation).

*Pacificchem 2000 Conference*, December 14, 2000, Honolulu, Hawaii. Rampersad, Marilyn V.; Howell, Roberta.; Francesconi, Lynn. C. "Contrasting Reactive Properties of Rhenium and Technetium with Cyclic Metaphosphates and the Phosphate Based Polyoxotungstate  $P_2W_{17}O_{61}]^{-10}$ ." (Award winner best poster presentation)

### SHORT COURSES AND WORKSHOPS

"Just Ask for it: Effective Negotiation" *Texas A and M University*, May 19<sup>th</sup>, 2018, College Station, TX. – a total of 40 participants

"Just Ask for it" The Art of Effective Negotiation" American Chemical Society Portland Section, Women in Science Summit, November 13, 2018- total of 20 participants

"Keep Calm and Find a Mentor Surviving Graduate School by Cultivating Mentorship Relationships", Women in Science PDX, October 24, 2018 - a total of 20 participants

Power Hour:" Just Ask for it", American Chemical Society, Division of Organic Chemistry, Graduate Research Symposium, July 28<sup>th</sup>, 2017- a total of 75 participants

Just Ask for it", Portland State Women in STEM Group, June 1<sup>st</sup>, 2017- a total of 50 participants, "Making things Small: Nanochemistry", Apprenticeship for Science Engineering, Summer Camp, August 22<sup>nd</sup>, 2017- a total of 35 participants

"A Guide to Development of Scientific Methodology" Ronald E. McNair Scholars, Feb 14, 2014, Portland, OR. Mackiewicz – a total of 40 participants

### RESEARCH AND EMPLOYMENT EXPERIENCE

2020- **Assistant Professor, Department of Chemistry, Oregon State University, Corvallis, Oregon**

- Develop nanostructured materials for applications to improve human health and the environment that include
  - Image-guided drug delivery agents for cancer therapy
  - Gold nanorods for use as contrast agents for *in vivo* optical coherence tomography imaging of the repair process in macular degeneration and glaucoma
  - Development of nanoparticle-based antimicrobial and antiviral agents
- Investigation protein aggregation and the effect of small molecules on inhibiting or reversing protein aggregation to identify molecular targets Alzheimer's disease
- Study of nanoparticle-biological interactions, their impact on toxicity, and assessing their environmental fate

2010-2020 **Research Assistant Professor, Department of Chemistry, Portland State University, Portland, Oregon**

- Develop nanostructured materials for applications to improve human health and the environment that include
  - Image-guided drug delivery agents for cancer therapy
  - Gold nanorods for use as contrast agents for *in vivo* optical coherence tomography imaging of the repair process in macular degeneration and glaucoma
  - Development of nanoparticle-based antimicrobial and antiviral agents

- Investigation protein aggregation and the effect of small molecules on inhibiting or reversing protein aggregation to identify molecular targets Alzheimer's disease
- Study of nanoparticle-biological interactions, their impact on toxicity, and assessing their environmental fate

2017-present **Adjunct Faculty, University Studies, Portland State University, Portland Oregon**

- Developed a capstone focused on empowering and advancing women and underrepresented students in STEM
- Help students build, plan, and disseminate knowledge in professional development skills in a 1-day conference
- Work with community partners from the Apprenticeship for Science Engineering, Oregon MESA, and Girls Inc programs to transfer professional development knowledge and skills from undergraduate students to high school students

2017-present **Enrichment Lead, NIH BUILD EXITO Program, Portland State University, Portland, Oregon**

- Serve as a lead instructor for enrichment sessions to enhance their professional development skills and build their scientific identities for NIH Building Infrastructure Leading to Diversity and Enhancing Cross-disciplinary Infrastructure Training at Oregon (BUILD EXITO) scholars
- Coordinate, lead, mentor BUILD EXITO peer mentors for enrichment activities
- Plan and design interactive professional development workshops to build students professional identities
- Serve on the Scholarly Success Committee (SSC) to ensure students are on track with EXITO program requirements and success in research learning communities

2017-2017 **Visiting Scholar. Department of Dermatology, Oregon Health and Science University, Portland, Oregon**

- Developed skills in cell culture methods and protocols to work with cancer cells
- Investigating the effects of electrophilic compounds as potential anti-cancer drugs for melanoma cells

2016-2019 **Affiliate Faculty, Environmental and Molecular Toxicology, Oregon State University, Corvallis, Oregon**

- Serve on thesis committees of graduate students at Oregon State University

2007-2009 **Scott M. Reed, Department of Chemistry, University of Denver, Colorado**  
Post-Doctoral Fellow. Development of safer nanomaterials by green synthetic routes for biomedical applications

- Designed and synthesized membrane-capped gold and silver with unique stability, solubility, and phase transfer properties for biomedical applications
- Studied and characterized nanomaterials by transmission electron microscopy, thermogravimetric analysis, UV-vis spectroscopy, and dynamic light scattering

- Developed a lipid-coated gold nanoparticle-based aptamer sensor for C-reactive protein detection (a cardiovascular marker) and conducted nanoparticle-protein binding studies to investigate how C-reactive interactions with membranes using fluorescence anisotropy
- Collaborate and frequently present research with ONIRG (Oregon Nanomedicine Interdisciplinary Research Group, a partnership between PSU and OHSU)
- Individual contributor to collaborative projects within the Reed research group including synthesis and TEM characterization of gold and silver nanomaterials

2006-2006 **Process Engineer, Intel**

- High Volume Manufacturing of Microprocessors
  - Sustained polysilicon layer in the lithography division during RAMP up or high-volume manufacturing of microprocessors
  - Maintained statistical process control over the poly layer by line dimension analysis using scanning electron microscopy (SEM)

2001-2005 **Marcetta Y. Darensbourg, Department of Chemistry, Texas A&M University, College Station, Texas**

Research Assistant. Developed NiN<sub>2</sub>S<sub>2</sub> complexes as bidentate ligands for use in organometallic chemistry such as in CO/CH<sub>2</sub>=CH<sub>2</sub> copolymerization or *Acetyl CoA synthase* enzyme model chemistry

- Synthesized a series of NiN<sub>2</sub>S<sub>2</sub>M complexes under anaerobic conditions
- Investigated the steric, electronic, electron-donating properties, and the stability of NiN<sub>2</sub>S<sub>2</sub>M complexes (UV-vis, infrared spectroscopy, X-ray analysis, and NMR)
- Demonstrated that NiN<sub>2</sub>S<sub>2</sub> ligands could stabilize metal ions (NiN<sub>2</sub>S<sub>2</sub>PdL<sub>2</sub>) modeling reactivity of the acetyl CoA enzyme (thioester formation) and is an active catalyst for polyketone formation similar to classical ligands<sup>7</sup>
- Performed kinetic and mechanistic studies of CO insertion process in polyketone formation with [NiN<sub>2</sub>S<sub>2</sub>Pd(C(O)CH<sub>3</sub>)(CO)]<sup>+</sup> catalyst
- Individual contributor: collaborated in metal binding studies (UV-vis spectroscopy) and structural analysis (X-ray crystallography) of [NiN<sub>2</sub>S<sub>2</sub>]M complexes
- Individual contributor: X-ray crystallographic and electrochemical studies of bioinorganic diiron model complexes of the *Fe-only Hydrogenase* enzyme

1997-2001 **Lynn C. Francesconi, Department of Chemistry, Hunter College of City University of New York, New York, New York.**

MARC Research Assistant. Synthesized and characterized Rhenium (I and V) metal ion complexes of cyclometaphosphates (P<sub>3</sub>O<sub>9</sub><sup>-3</sup> and P<sub>4</sub>O<sub>12</sub><sup>-4</sup>) as analogs to technetium congeners of relevance to nuclear waste remediation

## TEACHING EXPERIENCE

2020-2021 **Oregon State University, Corvallis Oregon**

General Chemistry-Honors Section

- Taught CH232H section remotely in Winter 2021 using a flipped classroom model with defined [learning outcomes](#) that included developing good and transferable communication and interpersonal skills

- Embedded culturally relevant practices to create an inclusive welcoming learning environment

#### Careers in Chemistry

- Developed structured lesson plans, notes, and course content for CHEM 220 for both sections.
- Developed a peer-to-peer mentor training document for peer mentors in the course and for the graduate student peer mentoring program in the department
- Guided peer mentors' students to develop transferable products for students such as videos and infographics disseminating knowledge on professional development
- Worked with students to develop infographics that will be used in the department on diverse chemists from underrepresented backgrounds
- Lead the planning sessions with peer mentors
- Organized and brought in a range of guest speakers to enrich the learning experiences of CHEM 220 scholars
- Connected students with the chemistry community to reshape the image of the department with undergraduate students

2017-2019

#### **Portland State University, Portland, OR**

##### Senior Capstone: Empower and Advance Women and Underrepresented Students in STEM

- Developed a capstone focused on building skills in effective communication, negotiation, leadership, networking, mentoring, and professional development
- Emphasized transferable skills traditionally not learned in a classroom that is essential to advancing successful STEM careers
- Guided capstone students to develop transferable products for students such as videos and infographics disseminating knowledge on professional development
- Guided capstone students to work teams to design, implement, and evaluate a 1-day workshop to coach and transfer these essential STEM career preparation skills to high school students in the Apprenticeships in Science and Engineering" (ASE), MESA, and Girls Inc. Programs

2017-2018

#### **Portland State University, Portland, OR**

##### NIH BUILD EXITO Enrichment Workshop

- Designed curriculum to enhance, enrich, and build the professional skills of emerging scholars such as communication, leadership, negotiation, and networking
- Facilitated workshops and create a safe space for scholars to reflect upon their experiences and differences as underrepresented students deeply and critically in STEM
- Engaged students in meaningful discussions on topics that are essential for scholar professional development and success such as personal and professional identity, shared resources, self-care, networking, negotiation, communication, emotional intelligence, barriers to success as underrepresented students, and career planning

2016-2016

#### **Portland State University, Portland, OR**

##### CHEM+BIO CURE

- Course development
  - Developed safety protocols and best-known methods for instructing students in research practices
  - Worked with teaching assistants and faculty to develop strategies to help students develop independent interdisciplinary research projects employing knowledge and skills in biology and chemistry
  - Created assessments and rubrics to evaluate student learning and success in understanding chemistry knowledge, problem-solving skills, and critical thinking

2016-2016

**Portland State University, Portland, OR**

NIH BUILD EXITO Professional Development Workshops

- Implemented design strategies to communicate science orally and through a poster presentation that enhanced students' abilities to communicate their research to scientists and their peers
- Facilitated literature journal club meetings to help students gain skills in reading the literature, critically analyzing data, and constructing/deconstructing the mechanical aspects for writing manuscripts.

2012-2015

**Portland Metro STEM Partnership**

Lecture: Energy and Matter, Physical Science K12

- Demonstrated how to implement three-dimensional learning and practices of the Next Generation Science Standards (NGSS) to high school teachers so they can incorporate this framework into lesson plans to engage students in STEM
- Discussed strategies to implement culturally relevant pedagogy in the classroom environment
- Prepared demonstrations to explain core disciplinary content as well as science and engineering practices

2009-2011

**Portland State University, Portland, OR**

Lecturer: General Chemistry (221, 222, 223)

- Prepared engaging lectures and demonstrations to help students connect knowledge of chemistry in the classroom with applications of it everyday life for a class consisting of 80-250 students
- Designed problem sets using mastering chemistry online homework system to test student understanding of core disciplinary content and problem-solving
- Prepared exams and quizzes to test student knowledge, determine common student misconceptions, and enhance student retention of material
- Maintained regular office hours and review sessions connect with students to uncover and elucidate misconceptions in chemistry knowledge

2003-2004

**Texas A&M University, College Station, TX**

Teaching Assistant: Advanced Inorganic Laboratory

- Instructed students on air-sensitive manipulations using glove box and Schlenk line techniques for the synthesis of inorganic and organometallic complexes.



- Taught students how to investigate the physical and chemical properties of these complexes using cyclic voltammetry, thermogravimetric analysis, magnetic susceptibility, x-ray crystallography, NMR, IR, and UV-vis spectroscopy.
- Guided students to design their own experiments testing their skills in air-sensitive and spectroscopy techniques.
- Aided students in writing manuscript-type lab reports, and provided reviewer feedback on written manuscripts.
- Managed all aspects of the lab including chemical inventory, maintenance of the spectroscopic instrument, and lab safety.

2004-2004 **Texas A&M University, College Station, TX**  
Teaching Assistant: Organometallic Chemistry Lecture

- Graded and prepared the answer keys to quizzes and exams as well as homework assignments relating to classical organometallic literature assignments.

2001-2003 **Texas A&M University, College Station, TX**

Teaching Assistant: General Chemistry

Prepared recitations, wrote quizzes, graded lab work and lecture exams, and demonstrated proper lab techniques and safety.

## HONORS AND AWARDS

- Disease Mechanism Award (2021)
- American Chemistry Society Stanley Israel Award (2020)
- Adjunct Faculty Research Excellence Award, 2018
- Präsident Diversity Award, 2017
- Ronald McNair Mentor Award, 2014, 2015, 2016, 2017
- PSU Faculty Enhancement Travel Award, 2014
- PSU Sustainability Travel Award, 2015
- Louis Stokes Alliance for Minority Participation Mentor Award
- Ruth L. Kirschstein-NRSA (NIH) Training Grant, 2004-2005
- Industry-University Cooperative Chemistry Program (IUCCP) - Best Presenter Award, 2004
- A.E. Martell Travel Award, Texas A & M University, 2003
- MARC (Minority Access Research Center) Fellowship, 2000-2001
- PacifiChem 2000 Conference- Best Poster Award, 2000
- Oliver Stewart Reynolds Research Award, 2000
- Dean's Lists, 1995, 1996, 1999
- National Golden Gate Key Honor Society, member since 1996
- Presidential Hunter College Community Service 1998

## DEPARTMENTAL AND COLLEGE OF SCIENCE ACTIVITIES

### Department and College of Science Committee

- Chair of Equity Justice and Inclusion Committee 2020-present
- Strategic Planning Committee in Chemistry, member, 2020-present
- Strategic Planning Committee in College of Science, member 2020-present

### Ph.D. and MS Research Committee Member

- Campbell James, Engineering, Jeff Nason

- Andre Schaum, Environmental Toxicology, Jenifer Fields
- Suji Park, Chemistry, Claudia Maier
- Zhiwei Mao, Chemistry, May Nyman
- Pavel Sengupta, Dipankar Kholey
- Rachelle Smith, May Nyman 2021
- Ryan Lopez, Robyn Leigh Tanguay
- Yvonne Rericha, Robyn Leigh Tanguay
- Kimia Kiaei, Kyriakos Stylianou

## PROFESSIONAL ACTIVITIES

- American Chemical Society Undergraduate Research and recruitment Symposium, co-chair, 2015-present
- Chair of the Diversity Committee, American Chemical Society Local Portland section 2019-2020
- ACS Northwest Regional Meeting, Portland, Oregon, Chair, 2019
- Women in Science Summit, Portland, Oregon, co-Chair, 2018
- IEEE Nanomaterials and Nanodevices, Portland, Oregon, co-chair 2018
- NIH BUILD EXITO Scholar Success Committee Member 2017-2020
- Radiation Safety Committee, 2017-2020
- American Chemical Society Division of Organic Chemistry Graduate Research Symposium, co-organizer, 2017
- PSU Bridge Funding Committee, 2016
- PSU Women STEM group, advisory committee member, 2015-2020
- NIH BUILD EXITO Career Mentor, 2015-2020
- NIH BUILD EXITO Research Mentor, 2015-2020
- Ronald McNair Research Mentor, 2014-2021
- Louis Stokes Alliance for Minority Participation Research Mentor, 2014-2020
- Reviewer: Journal of Nanoparticle Research, Bioconjugate Chemistry, European Journal of Medicinal Chemistry, Langmuir, Colloids, and Surfaces B: Interfaces, RSC Advances, Biochemistry, RSC Chemical Communications, ACS Nanoscience Au.

## GRADUATE RESEARCH ADVISOR

### Current Graduate Research Students

1. Caren Kudziashe Tome (M.S in Chemical Engineering, Ph.D. Starting Fall 2021)

## UNDERGRADUATE RESEARCH ADVISOR

### Current Undergraduate Research Students:

2. Alexandria Murphy (McNair Scholar, Biology Major)
3. Eli Henderson (Chemistry Major)
4. Citlali Nieves Lira (LSAMP, STEM Leaders, Honors College, Chemistry Major)
5. Aubrey Nida (Chemistry Major)

### Previous High School Students:

1. Citlali Nieves Lira (High School Student Summer 2018, 2019, Tigard, American Chemical Society SEED student)
2. Rohan Ajarapu (High School Student Summer 2017, 2018, West View High School, Portland Oregon)
3. Diana Angeles (High School Student Summer 2017, Tigard, American Chemical Society SEED student)

4. Nicole Zhen (High School Student Summer 2016, Clackamas American Chemical Society SEED student)
5. Ramya Ajarapu (High School Student Summer 2014, 2015, 2016, West View High School, Portland Oregon)

## RESEARCH ASSISTANTS

### Previous Research Assistants:

1. Eleanor Adams (BS in Public Health and Spanish)
2. Arek Engstrom (M.S. in Bioengineering Oregon State University)
3. Meenambika Gowrishankar (M.S. in Chemistry 2013 University of Oregon, Staff Scientist at Pacific Light)

### Previous Undergraduate Research Students:

1. Rutendo Nyamadzawo (NSF REU student 2021, Franklin University)
2. Jake Nicholson (NSF REU student, Biochemistry Major, Ph.D. Student Texas A and M University)
3. Brendan Burke (Chemistry Major, graduated 2021)
4. Jeajung Kim (Bioengineering Major)
5. Haley Hughes (Honors College, Chemistry Major)
6. Daniel Schwartz (Post Bac. Chemistry major with a B.A. in Romance Languages)
7. Felica Zhou (NSF REU Biology Major, NIH BUILD EXITO scholar)
8. Kim Paulin (Biochemistry, NIH BUILD EXITO scholar)
9. Jennifer Lemus (NSF REU, Southern Oregon University, Biology major)
10. Eleanor Adams (B.S. in Biochemistry, NIH BUILD EXITO scholar, Honors College, 2019)
11. Henry Wu (B.S in Biochemistry, NIH BUILD EXITO scholar, 2019, Graduate student at University of Michigan)
12. Hamzah Sawab (B.S. Biochemistry in Honors, 2019)
13. Jared Boss (NSF REU student 2018, Ohio State University)
14. Megan Feely (B.S. in Public Health, Honors College 2017, NIH BUILD EXITO scholar, Honors College)
15. Javier Mendoza (B.S in Engineering, 2017, NIH BUILD EXITO scholar)
16. Nathan Bedard (NSF REU student, 2017, Viterbo University, Wisconsin)
17. Karen Kinnison (Chemistry Major 2016-2018, Ronald McNair Scholar)
18. Grant Marquart (B.S. 2015 in Biochemistry Major, Honors Program)
19. Thomas J. Miesen (B.S 2013, Washington State University Engineering)
20. Dane C. Frost (B.S in Microbiology (Honors) 2015, McNair Scholar)
21. Amy Chui (NSF REU student 2016, engineering, Washington State University)
22. Sven Burke (NSF REU student 2016, engineering Washington State University)
23. Erica Lopez (B.S. in Chemistry, LSAMP, McNair Scholar, Lo Malinda Dental School)
24. Timothy Pillow (B.S. in Chemistry at University of Oregon 2015)
25. Dejunique Brown (EXITO scholar, PCC Bridge Program Summer Research 2015)
26. Tan Nguyen (B.S. in Biochemistry (Honors) 2015, McNair Scholar, Graduate Student at Texas A and M University in Chemistry)
27. Brent Jorgenson (B.S. in General Science 2015 and BA in Business Administration and)
28. Molly Clifton (B.S. in Chemistry (Honors) 2015)
29. Rosina Ho Wu (B.S. in Chemistry (Honors) 2013, Graduate Student U. of Michigan in Chemistry)

30. Theresa Mau (B.S. in Microbiology (Honors) 2013, Graduate Student U. of Michigan in Biology)
31. Jennie Keller (B.S. in Chemistry 2013 at PSU, M.S. at U. of Oregon Chemistry 2014, Staff Scientist Los Alamos National Lab, currently at Nike)
32. Andrew Ma (B.S. in Chemistry 2013, Oregon State University School of Pharmacology)
33. Shauyaun Azimi (B.S. in Chemistry 2013, Medical School at Western University COMP)
34. Colin Ross (Graduated from PSU 2013, B.S in General Science with Honors)

## SUMMARY DEMOGRAPHICS OF MENTORED STUDENTS

|   | n  | %  |
|---|----|----|
| <b>Total Students Participated in 1+ Years of Research (12 years)</b> | 44 |    |
| URM (Asian, Black, American Indian, Latin)                            | 22 | 50 |
| Non-URM   | 22 | 50 |
| BS/MS Level Research Assistants                                       | 2  | 5  |
| Total High School Students  | 5  | 11 |
| Total Undergraduates  | 37 | 84 |
| <b>Gender Identity</b>  |    |    |
| Male  | 22 | 50 |
| Female  | 22 | 50 |
| other   | 0  | 0  |
| <b>Types of Undergraduate Majors</b>                                  |    |    |
| Chemistry or Biochemistry   | 22 | 63 |
| Biology   | 5  | 14 |
| Physics   | 0  | 0  |
| Engineering   | 6  | 17 |
| General Science   | 2  | 6  |
| Public Health   | 2  | 6  |
| <b>Total Degrees up to 2021</b>                                       |    |    |
| <b>BS/MS Level Research Assistants</b>                                |    |    |
| BA/BS non-URM   | 15 | 34 |
| BA/BS URM   | 15 | 34 |
| Masters   | 4  | 13 |
| PhD   | 3  | 10 |
| MD  | 1  | 3  |
| Higher level degrees in progress                                      | 14 | 32 |
| <b>STEM Professions</b>   |    |    |
| Dentistry   | 1  | 2  |
| Medicine  | 3  | 7  |
| Pharmacy  | 1  | 2  |
| Industry  | 5  | 11 |
| <b>non-STEM Professions</b>   |    |    |
| Manager   | 1  | 2  |
| <b>Students from Research Programs</b>                                |    |    |
| Ronald McNair   | 9  | 20 |
| LSAMP   | 2  | 5  |
| NIH BUILD EXITO   | 6  | 14 |
| ACS SEED Scholars Program   | 2  | 5  |
| NSF REU   | 8  | 18 |
| Honors College with thesis  | 9  | 20 |