# Sharon J. Nieter Burgmayer
# W. Alton Jones Professor of Chemistry

office
Department of Chemistry
Bryn Mawr College
Bryn Mawr, PA 19010
(610)526-5106
sburgmay@brynmawr.edu

## Education

| | | |
|---|---|---|
| Ph.D. in Inorganic Chemistry | University of North Carolina at Chapel Hill | 1984 |
| B.S. in Chemistry and French<br>magna cum laude | Heidelberg College, Tiffin, Ohio | 1979 |

## Professional Appointments

| | | |
|---|---|---|
| Dean of Graduate Studies | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 2014-2021 |
| Interim Dean of Graduate Studies | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 2013-2014 |
| W. Alton Jones Professor of Chemistry | | 2011 |
| Acting Chairman,<br>Department of Chemistry | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 2002-2003 |
| Professor of Chemistry | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 2000-2024 |
| Visiting Professor<br>Department of Chemistry | University of Arizona<br>Tucson, Arizona | 1999-2000 |
| Chairman,<br>Department of Chemistry | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 1994-1999 |
| Associate Professor of Chemistry | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 1992-2000 |
| Assistant Professor of Chemistry | Bryn Mawr College<br>Bryn Mawr, Pennsylvania | 1986-1992 |
| Postdoctoral Research Chemist | Exxon Research & Engineering Company<br>Corporate Research Laboratories<br>Clinton, New Jersey | 1984-1986 |

## Research Grant Awards and Proposals

National Institutes of Health 2014-2019 $370,600
*"Investigation of a Pterin-Dithiolene Model Complex for the Molybdenum Cofactor"*

HHMI New Directions Grant 2013-2014 $23,500
*"Transition Metals and Computational Modeling: Classroom and Laboratory Applications"*
with Prof. Jason Schmink

Mellon Tri-co Program, co-proposer, *In support of "*Tri-co Bioinorganic Community" (TBIC)
2011-2012 $2300
2010-2011 $1500
2009-2010 $1500

ACS Petroleum Research Fund 2008 $3600
*In support of "Frontier in Metal Dithiolenes" symposium*

National Institutes of Health 2007-2011 (*incl. 1 yr extension*) $210,867
*"Molybdenum Pterin-Dithiolene Complexes for model Studies of the Catalytic Site "*

National Institutes of Health 2000-2003 $98,417
*"Study of Improved Model Complexes for Molybdoenzyme Active Sites"*

National Science Foundation 1999-2001 $82,686
*"Studies of Model Compounds for the Active Site of DMSO Reductase"*

Bryn Mawr College Faculty Research Grant 1995-1996 $2350
*"Purchase of a Research Microscope"*

Research Corporation 1992-1994 $13,000
*"Studies of Model Compounds for the Metal Sites in Pterin-Dependent Metalloenzymes"*

National Institutes of Health 1990-1992 $120,113
*"Models for Metalloenzymes having Pterin Cofactors"*

Pew Science Program 1990-1991 $10,000
(with Dr. Lynn Francesconi, U. of Penn.)
*"Ligand Design Applied to Technecium Radiopharmaceutical Development"*

Pew Science Program 1989-1990 $8,000
(with Dr. Thomas Spiro, Princeton University)
*"Resonance Raman Studies on Molybdenum Dithiolene Model Complexes"*

Exxon Education Foundation 1987-1988 $15,000
*"Models for Molybdenum Enzymes"*

Exxon Research & Engineering Company 1987 $2,500
*"Syntheses of Copper(II) Pteridines"*

**Grant in Support of New Course Development**
Center for Science in Society and the Center for Visual Culture 2002-2003 $10,000

## Research Journal Articles (* denotes undergraduate researchers)

40. "Molybdenum Cofactor Model Reveals Remarkable Redox Activity at Both Molybdenum and the Pyranopterin Dithiolene Ligand"
Jinming Liu*, Angelina Rogatch*, Benjamin R. Williams[a], Chelsea Freer*, Chiara Zuccoli*, Jing Yang, Martin L. Kirk, Sharon J. Nieter Burgmayer, *J. Am. Chem. Soc., under review.*

39. "Making Moco: A Personal History"
Sharon J. Nieter Burgmayer, *Molecules*. 2023, Oct 27;28(21):7296.
doi: 10.3390/molecules28217296. PMID: 37959716 Free PMC article. Review.

38. "Advancing Our Understanding of Pyranopterin-Dithiolene Contributions to Moco Enzyme Catalysis"
Sharon J. Nieter Burgmayer, Martin L. Kirk, *Molecules*. 2023, Nov 7;28(22):7456.
doi: 10.3390/molecules28227456. PMID: 38005178 Free PMC article. Review.

37. "Interactions of ruthenium(II) polypyridyl complexes with human telomeric DNA"
V. T.Tran, J. Turek-Herman J, M. Ferreira, K. N. Martin, D. Beseiso , Benjamin R. Williams**, F. Rosu V. Gabelica, Sharon J. Nieter Burgmayer, Liliiya A.Yatsunyk, *J Inorg Biochem*. 2023, Dec;249:112388. doi: 10.1016/j.jinorgbio.2023.112388. Epub 2023 Sep 26. PMID: 37837940

36. "Protonation and Non-Innocent Ligand Behavior in Pyranopterin Dithiolene Molybdenum Complexes"
Cassandra Gates Haley Varnum*, Catherine Getty*, Natalie Loui*, Ju Chen, Martin L. Kirk, Sharon J. Nieter Burgmayer, *Inorganic Chemistry* 2022, **61**, 35, 13728–13742

35. "Modeling Pyran Formation in the Molybdenum Cofactor: Protonation of Quinoxalyl–Dithiolene Promoting Pyran Cyclization"
Douglas R. Gisewhite†, Alexandra L. Nagelski†*, Daniel C. Cummins‡, Glenn P. A. Yap, Sharon J. Nieter Burgmayer, *Inorganic Chemistry* 2019, **58**, 8, 5134-5144

34. "Implications of Pyran Cyclization and Pterin Conformation on Oxidized Forms of the Molybdenum Cofactor"
Douglas Gisewhite, Jing Yang, Benjamin R. Williams, Alisha Esmail*, Ben Stein, Martin L. Kirk, Sharon J. Nieter Burgmayer, *J. Am. Chem. Soc.* 2018, **140**, 12808-12818.

33. "Solvent-Dependent Pyranopterin Cyclization In Molybdenum Cofactor Model Complexes"
Benjamin R. Williams, Douglas Gisewhite, Anna Kalinsky*, Alisha Esmail*, Sharon J. Nieter Burgmayer, *Inorganic Chemistry, 2015,* **54**, 8214-8222.

32. "Recent Developments in the Study of Molybdoenzyme Models"
Partha Basu and Sharon J. Nieter Burgmayer
*Journal of Biological Inorganic Chemistry*, ***2015***, 20, 373-383.

31. “Structure and Reversible Pyran Formation in Molybdenum Pyranopterin Dithiolene Models of the Molybdenum Cofactor”,
Benjamin R. Williams, Yichun Fu*, Glenn P. A. Yap, Sharon J. Nieter Burgmayer
*Journal of the American Chemical Society* ***2012***, 134, 19584–19587.

30. “Pteridine Cleavage Facilitates DNA Cleavage”
Benjamin Williams, Shannon Dalton, Meredith Skiba*, Susie Kim*, Allison Shatz*, Patrick Carroll, Sharon J. Nieter Burgmayer, *Inorganic Chemistry* ***2012***, 51, 12669–12681.

29. “A Study of Mo(4+)Quinoxalyl-Dithiolenes as Models for the Non-Innocent Pyranopterin in the Molybdenum Cofactor”
Kelly G. Matz, Rebecca Rothstein*, Regina P. Mtei, Sharon J. Nieter Burgmayer, Martin L. Kirk, *Inorganic Chemistry* ***2011***, 50, 9804–9815. *Invited contribution and journal cover art*

28. “Pterin Chemistry and its Relationship to the Molybdenum Cofactor”
Partha Basu and Sharon J. Nieter Burgmayer, *Coordination Chemistry Reviews* ***2011***, 255, 1016–1038. *Invited contribution*

27. “Noninnocent Dithiolene Ligands: A New Oxomolybdenum Complex Possessing a Donor-Acceptor Dithiolene Ligand”
Kelly G. Matz, Belinda Leung*, Regina P. Mtei, Sharon J. Nieter Burgmayer, Martin L. Kirk
*Journal of the American Chemical Society* ***2010***, 132, 7830-7831.

26. “DNA Binding by Ru(II)-bis(bipyridine)-Pteridinyl Complexes”
Shannon Dalton, Samantha Glazier, Belinda Leung*, Sanda Win*,
Sharon J. Nieter Burgmayer, *Journal of Biological Inorganic Chemistry,* ***2008,*** 13, 1133-1148**.**

25. **“**Synthesis, Characterization, and Spectroscopy of Model Molybdopterin Complexes**”**
Sharon J. Nieter Burgmayer, Mary Kim*, Rebecca Petit*, Amy Rothkopf*, Alison Kim*, Shadia BelHamdounia*, Ying Hou*, Arpad Somogyi, Diana Habel-Rodriguez, Antonio Williams, Martin L. Kirk, *Invited paper, Journal of Inorganic Biochemistry,* **2007**, 101, 1601-1616.

24. “Redox Reactions of the Pyranopterin System of the Molybdenum Cofactor “
Sharon J. Nieter Burgmayer, Dori L. Pearsall, Shannon Blaney*, Eva Moore*, Calies Sauk-Schubert*
*Journal of Biological Inorganic Chemistry,* **2004**, 9, 59.

23. "Molybdenum-Pterin Chemistry Part 1. The Five Electron Oxidation of an Oxo-Molybdenum-Dithiolate Complex of Reduced Pterin Coupled to DMSO Reduction"
Heather Layton Kaufmann, Louise Liable-Sands, Arnold L. Rheingold, Sharon J. Nieter Burgmayer. *Inorganic Chemistry* **1999**, 38, 2592.

22. "Molybdenum-Pterin Chemistry Part 2. A Reinvestigation of Molybdenum-Flavin Chemistry"
Heather Layton Kaufmann, Patrick J. Carroll, Sharon J. Nieter Burgmayer.
*Inorganic Chemistry* **1999**, 38, 2600.

21. "Molybdenum-Pterin Chemistry Part 3. X-Ray Photoelectron Spectrocopy of Molybdenum-Pterin Complexes. A Solution to the Oxidation State Assignment Problem",
Sharon J. Nieter Burgmayer, Heather L. Kaufmann, G. Fortunato, Paul Hug, Berthold Fischer.
*Inorganic Chemistry* **1999**, 38, 2607.

20. "Use of a Titanium Metallocene as a Colorimetric Indicator for Learning Inert Atmosphere Techniques"
Sharon J. Nieter Burgmayer, *Journal of Chemical Education* **1998,** 75, 460.

19. "Tetrahydropterin Reactions of Dioxo-Molybdenum(6+) Complexes. Does Redox Occur?"
Sharon J. Nieter Burgmayer, Michelle R. Arkin*, Laura Bostick*, Sara Dempster*, Kristin Everett*, Heather Layton, Kateri Paul, * Cory Rogge*.
*Journal of the American Chemical Society* **1995**, 117, 5812.

18. "Oxidation of Molybdenum Dithiolene Complexes Yields Thiophene Analogues of Urothione and Molybdopterin Form B"
Cheryl L. Soricelli, Veronika A. Szalai*, Sharon J. Nieter Burgmayer.
*Journal of the American Chemical Society* **1991**, 113, 9877.

17. "Preparations and Properties of Transition Metal Pterin Complexes. Models for the Metal Site in Phenylalanine Hydroxylase"
Joanna Perkinson, * Sharon Brodie*, Keum Yoon*, Karoline Mosny*, Patrick J. Carroll, T. Vance Morgan, Sharon J. Nieter Burgmayer. *Inorganic Chemistry* **1991**, 30, 719.

16. "Resonance Raman Signatures of Oxomolybdenum Thiolate and Dithiolene Models of Molybdenum Proteins"
Prem Subramanian, Sharon J. Nieter Burgmayer, Sarah Richards*, Veronika Szalai, * Thomas G. Spiro. *Inorganic Chemistry* **1990**, 29, 3849.

15. "A Model Reaction for the Mo(VI) Reduction by Molybdopterin"
Sharon J. Nieter Burgmayer, Amy Baruch*, Karen Kerr*, Keum Yoon*.
*Journal of the American Chemical Society* **1989**, 111, 4982.

14. "Transition-Metal Pteridines. Preparation and Characterization of Cobalt Pteridines"
Sharon J. Nieter Burgmayer, Edward I. Stiefel. *Inorganic Chemistry* **1988**, 27, 4059.

13. "Reactions of Molybdate with Dithiothreitol. The Structure of $[TEA]_2[Mo_2O_5$(L-dithiothreitolate)]"
Sharon J. Nieter Burgmayer, Edward I. Stiefel.
*Inorganic Chemistry* **1988**, 27, 2518.

12. "Protein Nitrogen Coordination to the FeMo Center of Nitrogenase from *Clostridium Pasteurianum"*
H. Thomann, T. V. Morgan, H. Jin, S. J. N. Burgmayer, R. E. Bare and E. I. Stiefel.
*Journal of the American Chemical Society* **1987**, 109, 7913.

11. "Electron Spin Echo Studies on Nitrogenase FeMo Protein and on the Iron Molybdenum Cofactor"
H. Thomann, T. V. Morgan, H. Jin, S. J. N. Burgmayer, C. L. Coyle and E. I. Stiefel
*Recueil des Travaux Chimiques des Pays-Bas* **1987**, 106, 311.

10. Stiefel, E. I., Thomann, H., Jin, H., Bare, R. E., Morgan, T. V., Burgmayer, S. J. N., and Coyle, C. L., in “Metal Clusters in Proteins” (L. Que, ed.), p. 372. Am. Chem. SOC., Washington, DC, 1988.

9. "Synthesis and Structure of the First Molybdenum-Pterin Complex"
Sharon J. Nieter Burgmayer, Edward I. Stiefel.
*Journal of the American Chemical Society* **1986**, 108, 8310.

8. "Molybdenum Enzymes, Cofactors and Model Systems"
Sharon J. Nieter Burgmayer, Edward I. Stiefel.
*Journal of Chemical Education* **1985**, 62, 943.

7. "Unusual Ligand Formation in $CS_2$ Chemistry: Synthesis, Structure and Reactivity of $Mo_2(S_2CNEt_2)_3(\square^2\text{-}CSC(S)S)(\square^2\text{-}S_3C_2NEt_2)$"
Sharon J. Nieter Burgmayer, J. L. Templeton.
*Inorganic Chemistry* **1985**, 24, 3939.

6. "Synthesis and Structure of a Seven-Cooordinate Molybdenum Carbonyl Fluoride Derivative"
Sharon J. Nieter Burgmayer, J.L. Templeton. *Inorganic Chemistry* **1985**, 24, 2224.

5. "Tungsten Vinylidenes and Carbynes from Terminal Alkyne Reagents"
K. R. Birdwhistell, S. J. Nieter-Burgmayer, J. L. Templeton.
*Journal of the American Chemical Society* **1983,** 105, 7789.

4. "Synthesis, Structure and Spectral Properties of $Mo(RCCR')L_2X_2$ Complexes"
P. B. Winston, S.J. Nieter-Burgmayer, J. L. Templeton.
*Organometallics* **1983**, 2, 167.

3. "Synthesis and Structure of Molybdenum Dimer Illustrating d$\square$ Orbital Participation in Donation, Acceptance and Metal-Metal Bond Formation"
R. S. Herrick, S. J. Nieter-Burgmayer, J. L. Templeton.
*Journal of the American Chemical Society* **1983,** 105, 2599.

2. "Chemical, Spectral and Structural Features of $Mo(RCCR)_2(S_2CNC_4H_4)_2$ Complexes Containing the Electronically Unique Pyrrole-N-carbodithioate Ligand"
R. S. Herrick, S. J. Nieter-Burgmayer, J. L. Templeton. *Inorganic Chemistry* **1983,** 22, 3275.

1. "Frontier Orbital Control of Ligand Addition to $Mo(CO)_2(S_2CNEt_2)_2$"
J. L. Templeton, S. J. Nieter-Burgmayer. *Organometallics* **1982**, 1, 1007.

## Invited Book Chapters and Series Contributions

7. "The Role of the Pyranopterin Dithiolene Component of Moco in Molybdoenzyme Catalysis"
Sharon J. Nieter Burgmayer and Martin L. Kirk in *Structure and Bonding: Metallocofactors that Activate Small Molecules*, Ed. M. Ribbe, Springer Nature Switzerland, **2019**.
*Invited chapter contribution*

6. "Studies of pterin-inspired model compounds"
Sharon J. Nieter Burgmayer, Benjamin R. Williams and Partha Basu
*Enzymes: Bioinorganic Chemistry*, Ed. R. Hille, C. Schulzke, M. L. Kirk, Royal Society of Chemistry, Cambridge, **2016**, chapter 2, 8-67.
*Invited chapter contribution*

5. Dithiolenes in Biology "
Sharon J. Nieter Burgmayer, in Progress in Inorganic Chemistry, Vol. 52, Stiefel, E. I., Ed.; Wiley, N.Y., **2004.**

4. “Molybdenum Enzymes/Models”
Sharon J. Nieter Burgmayer in Encyclopedia of Catalysis, Horvath, I. T., Ed.; Wiley & Sons, NY, **2002**.

3. “Models for the Pyranopterin-Containing Molybdenum and Tungsten Cofactors”
Berthold Fischer and Sharon J. Nieter Burgmayer in Metal Ions in Biological Systems, Vol. 39, Sigel, A. and Sigel H., Eds.; Marcel Dekker, N. Y., **2002**, pp 265-305.

2. "Electron Transfer Reactions in Transition Metal Pterin Complexes"
Sharon J. Nieter Burgmayer, in Bioinorganic Chemistry of the Less Common Transition Metals, *Structure and Bonding* Vol. 92, Clarke, M. J., Ed., Springer: Heidelberg, **1998**, pp 67-120.

1. "Molybdenum Complexes of Reduced Pterins"
Sharon J. Nieter Burgmayer, Kristin Everett, Laura Bostick in Molybdenum Enzymes, Cofactors and Models, Stiefel, E. I., Coucouvanis, D., Newton, W., Eds.; American Chemical Society Symposium Series; A.C.S.: Washington D.C., **1993**, 114.

## Invited Book Reviews

1. "Transition Metal Sulfur Chemistry: Biological and Industrial Significance." Eds. Stiefel, E. I.; Matsumoto, K. ACS; Washington, 1996. Reviewed in, *J. Amer. Chem. Soc.* **1998**, 120, 614.

## Presentations with Abstracts

44. “The Enigma of Moco: Revealing the Secrets of the Molybdenum Cofactor”
Women+ in Chemistry Symposium, Univ. of North Carolina, Chapel Hill, October 2024, *invited speaker*

43. “Probing the Pterin-Dithiolene Ligand of the Molybdenum Cofactor”
Sharon J. Nieter Burgmayer, Gordon Research Conference "Metals in Biology", Ventura, CA, January 2023, *invited speaker*

42. “Electron Transfer Through Pyranopterin: What Model Compounds Reveal”
Sharon J. Nieter Burgmayer, Molybdenum and Tungsten Enzymes Conference, Indianapolis, October 2022, *invited speaker*

41. “Reactivity Studies of Pyranopterin Dithiolene Models for Moco: Investigating Methylation”
Sharon J. Nieter Burgmayer, Cassandra Gates, Molybdenum and Tungsten Enzymes Conference, virtual meeting, September 2021, *invited speaker*

40. “Roles for Pterin in Moco”
Sharon J. Nieter Burgmayer, Cassandra Gates Haley Varnum*, Molybdenum and Tungsten Enzymes Conference, Pottsdam, Germany July 2019, *invited speaker*

39. “Lessons Learned from Pterin-Dithiolene Models of the Molybdenum Cofactor”
Sharon J. Nieter Burgmayer,
Metallocofactors Conference, Gordon Research Conference, Mount Holyoke College, June 2018, *invited speaker*

38. “Modeling the Molybdenum Cofactor”
Sharon J. Nieter Burgmayer, Douglas R. Gisewhite, Benjamin Willilams, Alexandra Nagelski*, Nam Nguyen*
Mid-Atlantic Regional Meeting of ACS, Hershey, PA, June 2017, *invited speaker*

37. “Exploring Molybdenum Pterin-Dithiolene Reaction Chemistry”
Sharon J. Nieter Burgmayer, Benjamin Williams, Douglas Gisewhite, Molybdenum and Tungsten Enzymes Conference, Balatonfüred, Hungary, September 2015, *invited speaker*
36. “What is the role of the pterin-dithiolene ligand of the molybdenum cofactor?”
Sharon J. Nieter Burgmayer, Benjamin Williams, Yichun Fu*, Suyin Lee*, Hannah Gilbert*, Molybdenum and Tungsten Enzymes Conference, Sintra, Portugal, July 2013, *invited speaker*
35. “Studies of Molybdenum Pterin-Dithiolene Complexes”
Sharon J. Nieter Burgmayer, Benjamin Williams, Kelly Matz, Yichun Fu*, Suyin Lee*, Hannah Gilbert*, Molybdenum and Tungsten Enzymes Conference, University of Alberta, Canada, July 2011, *invited speaker*
34. “Pterin Dithiolene as Non-Innocent Ligands”
Sharon J. Nieter Burgmayer, Kelly Ginion Matz, Martin Kirk, Regina Mtei.
Gordon Research Conference "Metals in Biology", Ventura, CA, January 2011
33. “The Three Ring Circus of Pterins”
Sharon J. Nieter Burgmayer, Kelly Ginion, Tanya Michelle Corder*, Rebecca Petit*, Amy Rothkopf* Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Lucca, Italy, July 2009, *invited speaker*
32. “Pterin-Dithiolene Complexes of Molybdenum as Models for Moco”
Sharon J. Nieter Burgmayer, ACS Nat’l Conference Conference, Phildelphia, August 2008 , *invited speaker*
31. “Pterin Dithiolene Chemistry and Hydroxyl Havoc”
Sharon J. Nieter Burgmayer, Kelly Ginion, Tanya Michelle Corder*, Rebecca Petit*, Amy Rothkopf* Gordon Research Conference "Metals in Biology", Ventura, January, 2008
30. “Making Pterin Dithiolene Ligands on Molybdenum”
Sharon J. Nieter Burgmayer, Kelly Ginion, Tanya Michelle Corder*, Rebecca Petit*, Amy Rothkopf* Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Salve Regina, N.H. July 2007, *invited speaker*
29.“Mulling Over Molybdopterin “
Sharon J. Nieter Burgmayer , Mica Grantham, Alison Kim, Mary Kim, Eleni Kardaras, Shadia BelHamdounia, Sruti Bhaumik,Candi Greeman
Gordon Research Conference "Metals in Biology", Ventura, January, 2005
28. “Intercalation of DNA by Ruthenium(II) Pteridinyl Complexes“
Shannon R. Dalton, Samantha Glazier, Alanna Albano, Courtney Megatulski, Sharon J. Nieter Burgmayer
International Conference on Bioinorganic Chemistry Ann Arbor, Michigan July 2005
27. ”Piecing Together the Molybdopterin Puzzle”
Sharon J. Nieter Burgmayer, Mica Grantham, Alison Kim, Ying Hou, Grace Shin, Ria Sankar
Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Oxford Univ., UK, July 2005.
26. ”Molybdenum Tris-Dithiolene Compounds with Unusual Magnetic Properties”
Sharon J. Nieter Burgmayer, Laura Rose Snyder, Angelina Lucento
36th international Conference on Coordination Chemistry, Merida, Mexico, July 2004.
25. ”Hyper-Paramagnetic Mo-tris-dithiolenes”
Sharon J. Nieter Burgmayer, Laura Rose Snyder, Angelina Lucento
NSF Workshop in Inorganic Chemistry, Sedona AZ, June 2004
24. “Molybdenum Dithiolenes: Mo(+4) Complexes Related to Mo-co?”
Sharon J. Nieter Burgmayer*, Laura Snyder, Janet Lee, Laura Picraux, Cheryl Soricelli
Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Salve Regina, N.H. 2003.
23. “Investigation of DNA Binding Interactions with Ru-pteridinyl Complexes”
Sharon J. Nieter Burgmayer*, Lindsay Alaishuski, Samantha Glazier, Courtney Megatulski

Gordon Research Conference "Metals in Biology", Ventura, January, 2003

22. “Building the Cofactor Ligand of the Mo and W Enzymes”
Gordon Research Conference "Environmental Bioinorganic Chemistry", NH, June, 2002

21. " Molybdenum Dithiolene Model Chemistry", Sharon J. Nieter Burgmayer, *invited speaker*,
Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Oxford, UK, July 2001.

20. “Embellished Molybdenum Dithiolenes: Spectroscopy, Reactivity, Electrochemistry”
Sharon J. Nieter Burgmayer*, Susan Ashton, Lindsay Alaishuski, Wendy Belliston, Anne Braun, Whitney Drake, Jennifer Malone, Francine Morris, Jeanne Moody, Ria Sankar, Akino Yamashita
Gordon Research Conference "Metals in Biology", entura, January, 2001

19. “Reaction Chemistry of Molybdenum Coordinated by Pterin- and Quinoxaline-Dithiolene Ligands”
Sharon J. Nieter Burgmayer*, Susan Ashton, Wendy Belliston, Anne Braun,Whitney Drake, Jennifer Malone, Francine Morris, Jennifer Pectol
Gordon Research Conference "Metals in Biology", entura, January, 2000

18. “Redox Reactions of the Pyranopterin System of the Molybdenum Cofactor “
Sharon J. Nieter Burgmayer*, Dori L. Pearsall, Eva M. Moore, Shannon M. Blaney, Whitney Drake, Calies Sauk-Schubert, Gordon Research Conference “Molybdenum and Tungsten Enzymes”, Plymouth, NH, July 1999
*and* International Conference on Bioinorganic Chemistry, Minneapolis, July 1999.

17. "A Double-Pronged Approach to the Molybdenum Cofactor" *with Dori Pearsall*
Gordon Research Conference "Metals in Biology", Ventura, January, 1998

16. "The Search For Small Molecule Models for the Molybdenum Cofactor" *with Dori Pearsall*
Molybdenum Enzyme Conference, Univ. Sussex, UK April, 1997

15. "The Search For Small Molecule Models for the Molybdenum Cofactor" *with Dori Pearsall*
Middle Atlantic Regional Meeting ACS, Villanova, May, 1996

14. "Molybdenum Complexes of Reduced Pterins" *with Kateri Paul, Heather Layton, Cory Rogge*
National American Chemical Society Meeting, Washington, D. C., August 1994

13. "ESEEM of Molybdenum Dithiolene Models for Mo-co"*with Cheryl Soricelli, Lisa Ziemer*
National American Chemical Society Meeting, Washington, D. C., August 1994

12. "Molybdenum Complexes of Dihydropterin" *invited symposium speaker*
National American Chemical Society Meeting, Washington, D. C., August 1992

11 "Properties of a Reduced Molybdenum-Pterin Complex" *with Kristin Everett*
National American Chemical Society Meeting, New York City, August 1991

10. "Reactions of Molybdenum-Dithiolenes Modelling the Reaction Center of Mo-co"*with Cheryl Soricelli,* National American Chemical Society Meeting, New York City, August 1991

9. "Metal Complex Reduction by Tetrahydropterin" *invited symposium speaker*
National American Chemical Society Meeting, Washington, D. C., August 1990

8. "Redox Reactions of Reduced Pterins with Copper and Molybdenum Complexes"
*with Kristin Everett, Michelle Arkin, Karoline Mosny*
International Conference on Bioinorganic Chemistry, Oxford, August, 1991

7. "Modelling the Molybdenum Cofactor"
Gordon Research Conference "Metals in Biology", Ventura, January, 1991

6. "Models for Metal-Pterin Cofactors in Metalloenzymes"
International Conference on Bioinorganic Chemistry, Boston, July, 1989

5. "Investigations of Pteridine Reactions with Transition Metals for Modelling Metalloenzymes having Pterin Cofactors"*with Joanna Perkinson, Amy Baruch, Sharon Brodie, Ayesha Jafri, Keum Yoon* National American Chemical Society Meeting, Toronto, June 1988

4. "Reactions of Molybdenum Sulfides with Acetylenes having Nitrogen Heterocyclic Substituents"
*with Veronika Szalai*
National American Chemical Society Meeting, Toronto, June 1988

3. "Synthesis and Structure of the First Molybdenum-Pterin Complex"

NationalAmerican Chemical Society Meeting, Chicago, September 1985

2. "Unusual Ligand Formation in $CS_2$ Chemistry: Synthesis, Structure Reactivity of $Mo_2(S_2CNEt_2)_3(\square^2\text{-}CSC(S)S)(\square^2\text{-}S_3C_2NEt_2)$"
National American Chemical Society Meeting, Philadelphia, September 1984

1. "Construction of $d^4$ Metal Carbonyl Derivatives with Acute OC-M-CO Angles"
National American Chemical Society Meeting,Washington, D.C., August 1983

## Presentations without Abstracts

| | | |
|---|---|---|
| 32. “Colors, Dyes, Fibers, Mordants” | Topics in Material Culture: Textile Dyes Bryn Mawr College | March 2025 |
| 31. “Lessons Learned from Pterin-Dithiolene Models of the Molybdenum Cofactor, | Wilkes University, | February 2019 |
| 30. “The Stuff of Art” | Renaissance Painting Bryn Mawr College | December 2019 |
| 29. “Lessons Learned from Model of the Molybdenum Cofactor: Why Nature Does Not Use a Methyl Group” | Los Alamos National Labs | September 2018 |
| 28. “Why Nature Does Not Use a Methyl Group” | Haverford College | October 2016 |
| 27. “Two Tales from Bioinorganic Chemistry” | Swarthmore College | March 2013 |
| 26. “Innocence Lost in Inorganic Chemistry” | Bryn Mawr College, | February 2012 |
| 25. “A Three Ring Circus of Pterin Dithiolenes” | University of Arizona | October 2010 |
| 24. “Two Tales from Bioinorganic Chemistry” | U. Richmond | November 2010 |
| 23. “A Three Ring Circus of Pterin Dithiolenes” | Franklin & Marshall | October 2010 |
| 22. “Tribute to Edward I. Stiefel” | GRC Conference on Molybdenum and Tungsten Enzymes Conference, NH | July2008 |
| 21. “Why The Answer is 42” | University of Arizona, | November 2005 |
| 20. “The Stuff of Art” Center for Visual Culture, | Bryn Mawr College, | March 2004. |
| 19. “Molybdenum Enzymes” | U. S. Naval Academy | October 2003 |
| 18. “Model Studies for the Molybdenum Cofactor” | U. S. Naval Academy | October 2003 |
| 17. "Make Mistakes! Takes Chances! Get Messy! | Bryn Mawr College Parents' Weekend | November 2002 |
| 16."A Molybdenum Enzyme Expedition" | Bryn Mawr College | April 2001 |
| 15. "Pterribly Pterrific Pterins" | Duquesne University | January 2000 |
| 14. "Pterribly Pterrific Pterins" | University of Arizona | October 1999 |
| 13. "Pterribly Pterrific Pterins" | Yale University | November 1996 |
| 12. "The Molybdenum-Pterin Cofactor" | Bryn Mawr College | April 1995 |
| 11. "Transition Metal Pterin Chemistry" | University of Maryland | October 1994 |
| 10. "Modeling the Molybdenum Cofactor" | Swarthmore College | September 1993 |
| 9. "Model Studies of the Molybdenum Cofactor" | Haverford College | January 1993 |
| 8. "Model Studies of the Molybdenum Cofactor" | SUNY, Buffalo | April 1992 |
| 7. "Model Studies of the Molybdenum Cofactor" | Hunter College | May 1992 |
| 6. "Modeling the Molybdenum Cofactor | Villanova University | April 1991 |
| 5. "Modeling the Metal-Pterin Cofactors in Hydroxylase Enzymes" | Weslylan College | May 1990 |
| 4. "Modeling the Metal-Pterin Cofactors in Hydroxylase Enzymes" | University of Virginia | April 1989 |
| 3. "Modeling the Metal-Pterin Cofactors in Hydroxylase Enzymes" | University of Georgia | November 1988 |
| 2. "Recent Advances in Modeling the Molybdenum Cofactor" | Exxon Research & Engineering Co. | September 1988 |

1. "Transition Metal Complexes of
Pteridines as Models for Metalloenzymes" University of Pennsylvania March 1987

## Current Research Collaborators

Dr. Martin Kirk, Department of Chemistry, University of New Mexico
Dr. Glenn Yap, Department of Chemistry, University of Delaware

## Post-Doctoral Associates

| | |
|---|---|
| Dr. Samantha Glazier, *Keck Teaching Postdoctoral Fellow*. | January 2002-2004 |
| Dr. Curtis Wahlgren | August, 1990-February, 1991 |

## College Activities

| | |
|---|---|
| Dean of Graduate Studies | 2013-2021 |
| Chair, GSSWSR Dean Search Committee | 2016 |
| Convenor, GSSWSR Leadership Transition Committee | 2015-2016 |
| Interim Dean of Graduate Studies | 2013-2014 |
| Chair, Committee on Nominations | 2012-2013 |
| Chair, ad hoc committee to review Arlo Weil | 2011-present |
| Committee on Nominations | 2010-2013 |
| Graduate Council | 2009-2011 |
| Director of Graduate Studies in Chemistry | 2009-present |
| Task Force on Alumni Engagement | 2010 |
| Chair, Committee on Appointments | 2008-2009 |
| Committee on Appointments | 2004-2009 |
| including multiple faculty searches in Biology, Geology and Physics | |
| Co-organizer, Chemistry Colloquium | 2008-2009 |
| Speaker, Northern New Jersey BMC Alumni | 2008 |
| Contributor, ***Science for College* program** | 2005, 2006, 2007 |
| Speaker, Prospective Students Weekend | 2007 |
| Speaker, Parents' Weekend | 2006 |
| Chair, Physical Chemist Search | 2005 |
| PKAL Leadership Initiative Team | 2004-2005 |
| Participant, MSPGP Pedagogy Workshop | 2004-2005 |
| Independent Major Advisor | 2004-2005 |
| *for Annalisa Allegretti, with Elliott Shore* | |
| Organizer and Speaker, ***Symposium on Beauty*** | 2004 |
| Chemistry Colloquium Series Organizer | 2001-2005 |
| Acting Chairman, Department of Chemistry | 2002-2003 |
| Graduate Council *& associated sub-committees* | 2002-2004 |
| Fellow, *joint fellow in the Center for Visual Culture and the Center for Science in Society* | 2002-2003 |
| Post-Bac Advisory Committee | 2003 |
| Mellon Workshop for Mid-Career Faculty | 2003 |

| | |
|---|---|
| Steering Committee, Center for Science in Society | 2002-present |
| Speaker, Parents' Weekend | 2002 |
| Panel Participant, Campaign Opening | 2002 |
| Presenter, McBride Workshop | 2002 |
| Freshmen Customs Faculty Participant | 2002 |
| Presenter, ***Summer Science Institute*** | 2002 |
| Participant, ***Summer Science Institute*** *Science as Exploration (BMC)* | 2001 |
| Committee on Appointments | 2000-2001 |
| Faculty Mentor | 2000-present |
| Chairman, Department of Chemistry | 1994-1999 |
| Coordination of the Sciences Committee | 1994-1999 |
| Chairman, Coordination of the Sciences Committee | 1996-1999 |
| OWL | 1998-1999 |
| Special Committee on Tenure Appeal | 1999 |
| Teaching Assistant Workshop | 1997 |
| Committee on Laboratories | 1988-1997 |
| Chairman, Committee on Laboratories | 1991-1993, 1994-1997 |
| Search Committee, Assistant Director of Health Professions Advising | summer 1997 |
| Admissions | 1988-1989 (substitute), 1989-1992 |
| 1902 Lecture Committee | 1992-1996 |
| Chairman, Parents' Day Committee | 1994 |
| Alumni Weekend Speaker | 1994 |
| Director of Graduate Studies in Chemistry | 1992-1993 |
| Computer Mathematics Search Committee | 1990 |
| Physics Search Committee | 1990 |
| Parents Day Speaker | 1989 |
| Representative to the Seven Sisters Conference | 1989 |
| Faculty Marshall | 1988 |
| Science Alumni Forum Committee | 1988 |
| Graduate Council | 1987-1988 (substitute) |
| Minority Summer Program | 1987 |

## Professional Activities

12. Organizational Steering Committee, Conference on Molybdenum and Tungsten Enzymes 2017 – present.
11. Chair, Conference on Molybdenum and Tungsten Enzymes, Santa Fe, New Mexico for June 2017
10. Co-Chair (with Günter Schwarz), Conference on Molybdenum and Tungsten Enzymes, Lake Balaton, Hungary for September 2015
9. Co-Chair (with Jose Moura), Conference on Molybdenum and Tungsten Enzymes, Lisbon, Portugal summer 2013
8. Co-Organizer, Symposium on Frontiers in Metal Dithiolenes, American Chemical Society National Meeting, Philadelphia, August 2008
7. Outside Reviewer, Department of Chemistry, Gettysburg Colllege, 2003
6. ACS Division of Education. Inorganic Exam Committee, August 2000-2002, and August 1995-1997

5. Chair, Cofactor Biosynthesis and Properties Session, Gordon Conference on Molybdenum and Tungsten Enzymes, July 1999
4. Delaware Valley Science Fair Judge, March 1992, March 2000
3. NSF review panel "REU Program for Undergraduates", Nov. 1993
2. AWIS Mentoring Project, December 1995
1. Chair, Bioinorganic Session, Middle Atlantic Regional Meeting, May 1996 American Chemical Society

## Master's Theses Supervised

1. Cheryl Soricelli, M.A. 1992 *(1989-1997)* "A Model For The Structure And Reactivity Of Mo-co"
2. Kristin Everett, M.A. 1992 *(1990-1992)* "Modelling Reactions of *cis*-Dioxo Molybdenum(VI) Complexes with Tetrahydropterins"
3. Yoko Momoyama, M.A. 1993 *(1991-1993)* "Studies Of Two Applications Of Bioinorganic Chemistry: Rhenium(V)-$N_2S_2$ Complexes And Ruthenium And Molybdenum(0) *Tris*-Pterin Complexes"
4. Jonathon Schwartz *(1991-1993) - incomplete*
5. Heather Layton, M.A. 1994*(1992-1997)*"Reactions Of Molybdenum-Tetrahydropterin Complexes"
6. Sharon Glasgow, M.A. 1995 *(1993-1995)* "Synthesis of Tethered Pterin Ligands"
7. Lilly Temu (incomplete) *(1994-1996)*
8. Dori L. Pearsall, M. A. 1998 *(1996-1998)* "An Investigation Of Redox Capabilities Of A Pyranopterin Model For Molybdopterin"
9. Ying Hou, M. A. 2004 (2003-2004)
10. Laura Snyder, M. A. 2004 (2003-2004) "Unusual Paramagnetic Molybdenum *Tris*-Dithiolenes)"
11. Shannon Dalton, M. A. 2005 (2003-2005) "DNA Intercalation by Ru(II)-*bis*(bipyridine)-Pteridinyl Complexes"
12. Mica Grantham (2003) – *incomplete*
13. Kelly Ginion (2004-2006) "A Synthetic, Structural, and Magnetic Investigation of Molybdenum Tris-Dithiolene Complexes"
14. Benjamin Williams (2009-2011) "An Investigation of Ruthenium Ring-Cleaved Pteridinyl Complexes and their DNA Photocleaving Ability"
15. Douglas Gisewhite (2014) "Probing Steric Effects in a Pyranopterin Dithiolene Model of the Molybdenum Cofactor"
16. Cassandra Gates (2016-2019) "Synthetic Modeling of Molybdenum Cofactor: Tuning the Model Relevance to Sulfite Oxidase"
17. Robin Fair (2017-2019) "Electrochemical and Computational Characterization of Molybdenum Cofactor Model Complexes"
18. Haley Varnum (2016-2019) "Modeling the Mononuclear Molybdenum Cofactor: Explorations into the Redox Reactivity of Protonation"

## Ph. D. Dissertations Supervised

1. Cheryl Soricelli, Ph. D. 1997 *(1989-1997)*
   "Synthesis Of Molybdenum-Dithiolene Complexes: A Route To The Active Site Of Molybdopterin-Containing Enzymes"
2. Heather Layton, Ph. D. 1997 *(1992-1997)*
   "Molybdenum-Pterin Complexes: Their Characterization, Reactivity And Relationship To The Synthetic Modeling Of The Molybdenum Cofactor"

3. Kelly Ginion Ph. D. 2010 *(2006 - 2010)*
   "Building a Better Model for the Molybdenum Cofactor: A New Class of Molybdenum Dithiolene Complexes"
4. Shannon Dalton Ph. D. 2009 *(2007 - 2009)*
   "An Investigation of the Interactions between DNA and Family of Ruthenium(II) Pteridinyl Complexes"
5. Benjamin Williams Ph. D. 2015 (2009 – 2015)
   "Exploring Pteridine Chemistry in Two Bioinorganic Systems"
6. Samantha Klein (2010 – 2019, jointly supervised with Jonas Goldsmith)
   "A Break In Communication: The Synthesis, Characterization, DNA Binding and Photocleavage of a Novel Ruthenium Polypyridyl Complex Containing an Electronically Isolated Pyrene Group"
7. Douglas Gisewhite Ph. D. 2017 (2014-2017)
   "The Molybdenum Cofactor: Modeling the Swiss Army Knife of Metabolic Diversity"
8. Cassandra Gates (2016-2023)
   "The Indivisible System: Modeling The Metal-Pterin-Dithiolene System In Molybdenum and Tungsten Cofactors"

## Undergraduate Research Supervised 1986-2006

1. Adrienne Howard 1986-1987
2. Joanna Perkinson 1986-1987, summer 1987 *(Exxon grant)*
3. Amy Baruch 1987-1988
4. Sharon Brodie 1987-1988
5. Ayesha Jafri 1987-1988
6. Veronka Szalai 1987-1988, summer 1988 *(Exxon grant)*
7. Najma Dalal 1988-1989
8. Karen Kerr 1988-1989, spring 1988 *(Exxon grant)*
9. Sushma Patel 1988-1989
10. Sarah Richards spring - summer 1988, *(Exxon grant),* Marshall Fellow, 1988-1989
11. Keum Yoon 1988-1989, summer 1988
12. Virginia Nez summer 1989
13. Kristin Everett 1988-1989 *(Dana fellowship* 1989-1990, summer 1990 *(Pew Science Consortium)*
14. Karoline Mosny 1988-1989 *(Dana fellowship* 1989-1990
15. Holli Horak 1989-1990, summer 1990 *(Pew Science Consortium)*
16. Michelle Arkin 1989-1990, summer 1990 *(NIH)* Marshall Fellow, 1989-1990
17. Yoko Momoyama summer 1990-1992 *(Pew Science Consortium)* Marshall Fellow, 1991-1992
18. Lavina Barwhani 1990-1992 *(Pew Science Consortium and NIH )*
19. Aletha Akers 1991 *(NIH)* , summer 1991, 1992-1993
20. Sarah Dempster summers 1991, 1992-1993
21. Audrey Ettinger 1991-1992
22. Katherine Erkkila 1991-1992
23. Lisa Ziemer summers 1992, 1993; 1993-1994
24. Laura Bostick summer 1992 and 1992-1993
25. Lily Tadayyon summer 1992 and 1992-1993
26. Joy Heising summer 1992 and 1992-1993
27. Charolotte Dai summer 1993 and 1993-1994
28. Kateri Paul summer 1993, 1994, Marshall Fellow, 1993-1994
29. Cory Rogge summers 1993, 1994; 1993-1994
30. Martha Heintzelman summer 1994, 1994-1995
31. John Murphy summer 1994 (Conestoga High School)
32. Jennifer Peterson fall 1994
33. Judy Burke 1994-1995 *(Minority Women in Science Program)*
34. Sara Tuttle summer 1995, 1995-1997
35. Stephanie Eisenbarth 1994-1996
36. Laurie Schubert summer 1995, 1995-1996
37. Mikalina Efros summer 1995, 1995-1996
38. Zermatt Scutt 1995-1996, *(Minority Women in Science Program)*
39. Jennifer Loch 1996-1997
40. Catherine Matsen 1996-1997
41. Carrie Tomasallo summer 1996, 1996-1997
42. Abi Haka semester II , 1996, 1997-1998
43. Carol Carneal summer 1997, 1997-1998
44. Telandria Boyd summer 1997, 1997-1998
45. Rebekah Katz summer 1997, 1997-1998
46. Eva Moore summer 1997, 1997-1998
47. Melissa Marchin 1997-1998

48. Laura Picraux 1997-1998
49. Mattie Towle 1997-1998, Sem I 1998
50. Susan Ashton 1998-2000
51. Francine Morris summer 1998-2000
52. Deborah Bae summer 1998, 1998-2000
53. Shannon Blaney summer 1998, 1998-1999
54. Kristin Gower summer 1998
55. Kristina Muncan. summer 1998, 1998-1999
56. Wendy Belliston 1998-1999
57. Deepa Jeyakumar Sem. I 1998
58. Rickquel Tripp 1998-1999,
*(GE Faculty for the Future)*
59. Ria Sankar 1998-2002
*(GE Faculty for the Future)*
60. Anne Braun Marshall fellow,1999-2000
61. Whitney Drake summer 1999, 1999-2000
62. Jen Malone summer 1999, 1999-2000
63. Jen Pectol summer 1999, 1999-2000
64. Teresa Perez summer 1999, 1999-2000
*(GE Faculty for the Future)*
65. Calies Sauk-Schubert summer 1999, 1999-2000
66. Mariah Schumacher summers 2000 and 2001, 2001-2002
67. Lindsay Alaishuski summers 2000 and 2002, 2002-2003
68. Janet Lee summers 2000 and 2001, 2001-2002
69. Grace Shin summers 2001 and 2002, 2002-2003
70. Rebecca Soinski summer 2000
71. Akino Yamashita summer 2000, 2000-2001
72. Jeanne Moody 2000-2001
73. Erin Dwight summer 2001, fall 2001
74. Jessica Herzog summer 2001, 2001-2002
75. Laura Snyder summers 2001 and 2002, 2002-2003
*(GE Faculty for the Future), Marshall Fellow 2003-2004.*
76. Kia Showell 2001-2002,
*(GE Faculty for the Future)*
77. Kesel Wilson summer 2001
78. Ying Hou summers 2001-2002, 2002-2003
79. Shanti Mikkilini summer 2002
80. Courtney Megatulski 2002-2005
81. Angelina Lucento summer 2003, 2003-2004
82. Alanna Albano summer 2004, 2004-2005
83. Cara Blankenbicker summer 2004, 2004-2005
84. Melissa Leedle summer 2004, SemI, 2004
85. Alison Kim 2004-2005
86. Eleni Kardaras 2004-2005
87. Mary Kim 2004-2006
88. Shadia BelHamdounia summer 2005, 2005-2006
89. Candacia Greeman summer 2005, 2006
90. Anna Merkle summer 2005, 2005-2006
91. Sruti Bhaumik 2005-2006
92. Sandi Mnuskin summer 2006, 2006-2007
93. Rebecca Petit summer 2006, 2006-2007
94. Amy Rothkopf summer 2006, 2006-2007
95. Tanya Corder summer 2007, 2007-2008
96. Lauren Dillon summer 2007, 2007-2008
97. Belinda Leung summer 2007, 2007-2008
98. Sanda Win summer 2007, 2007-2008
99. Erika Lippolt summer 2008, 2009-2009
100. Rebecca Rothstein summer 2008, 2008-2009
101. Alison Panosian summer 2008, 2009
102. Liz Beilinski 2008-2010
103. Allison Shatz summer 2009-2010
104. Stephanie Vrakas summer 2009-2010
105. Jenny Chen summer 2010-2011
106. Yichun Fu summer 2010-2012
107. Alex Gaudette spring 2009-2012
108. Susie Kim summer 2010-2011
109. Meredith Skiba summer 2010-2012
110. Suyin Lee spring 2011 - 2012
111. Sri Suresh spring 2011
112. Hannah Gilbert summer 2011-2014
113. Diane Kim spring 2012-2013
114. Alexandra Kirsch spring 2012-2014
115. Juliana Quarterman spring 2012-2013
116. Anna Kalinsky spring 2013
117. Rachael Kahelin summer 2013
118. Tianmin Chen fall 2013
119. Stephanie Yang 2013
120. Kai Wang 2013-2015
121. Alisha Esmail 2014-2015
122. Alexandra Nagelski 2015-2017
123. Eleanor Hayes summers 2013, 2014
*Harriton High School student*
124. Linda Zhang 2014-2015
125. Ashley Zhu 2014-2015
126. Divya Jain summers 2015 and 2018
*Great Valley High School student*
127. Nam Nyugen 2016 - 2018
128. Haley Varnam 2016 – 2019
129. Victoria Berke 2016 – 2019
130. Nazifa Tabbassum summer 2016
131. Leslie Reiffen 2016 – 2017
132. Sam Schulz summer 2017
*Radnor High School student*
133. Victoria Alonso 2017-2018
134. Nevada Powers spring 2018-2019
135. David Nemeth summer 2018
*Great Valley High School student*
136. Sherry Liu 2019 – 2022
137. Natalie Loui 2019– 2022
138. Catherine Getty 2019 – 2022
139. Darya Ostapenko 2021 – 2023
140. Chiara Zuccoli 2022 – present
141. Chelsey Freer 2022 – present
142. Angelina Rogatch 2022 – present

## Honors Theses Supervised

1. Amy Baruch (1987-1988) "Reaction of a Molybdenum Model Complex with 6,7-Dimethyl Tetrahydropterin"
2. Veronika Szalai (1987-1988) "Reactions of Molybdenum Sulfides with Nitrogen Heterocyclic Alkynes "
3. Ayesha Jafri (1987-1988) "Synthesis of Iron-Pterin Complexes"
4. Sarah Richards (1988-1989) "Reactions of Molybdenum Sulfides with Nitrogen Heterocyclic Alkynes "
5. Karen Kerr (1988-1989) "Mechanism of Model Complex Reaction Tetrahydropterins"
6. Michelle Arkin (1989-1990) "Investigations of Molybdenum (VI) tetrahydropterin Interactions"
7. Kristin Everett (1989-1990) "Model Systems to Investigate the Molybdenum Cofactor"
8. Karoline Mosny (1989-1990) "Creating Models for the Active Sites in Mammalian and Bacterial Phenylalanine Hydroxylase"
9. Lavina Bharwani (1991-1992) "Modelling the Active Sites of Bacterial Phenylalanine Hydroxylase by Investigating the Blue Intermediate"
10. Aletha Akers (1992-1993) "Study of DNA binding by Ruthenium Tris Pterin Complexes"
11. Laura Bostick (1992-1993) "Investigations of Molybdenum (VI) Tetrahydropterin Interactions"
12. Sara Dempster (1992-1993)"An Investigation of the Oxidation States in Two Molybdenum Complexes of Reduced Pterins Isolated from Mo-co Model Studies"
13. Lily Tadayyon (1992-1993) "Synthesis and Characterization of Transition Metal Pterin Complexes"
14. Charlotte Dai (1993-1994) "Study of DNA binding by Ruthenium Tris Pterin Complexes"
15. Cory Rogge (1993-1994) "Molybdenum Pterin Complexes"
16. Kateri Paul (1993-1994) "Redox Reactions of Reduced Molybdenum-Pterins"
17. Lisa Ziemer (1993-1994) "Novel Pterin Syntheses"
18. Martha Heintzelman (1994-1995 ) "Synthesis and DNA Binding Studies of Ruthenium-(phenanthroline-pterin) Complexes"
19. Stephanie Eisenbarth (1995-1996) "The Synthesis and Characterization of a bis-Dithiolene Molybdenum Cofactor Model "
20. Sarah Tuttle (1996-1997) "Synthesis and Characterization of a Molybdenum Mono-Oxo bis-Dithiolene Complex"
21. Abi Haka (1997-1998) "Total Synthesis of the Molybdenum Cofactor of DMSO Reductase: The First Seven Steps"
22. Rebekah Katz (1997-1998) "Synthesis, Characterization and Reactivity Studies of a Model of the Molybdenum Cofactor"
23. Laura Picraux (1997-1998) "Investigation of the Unusual Properties of Three Molybdenum Tris-dithiolene Complexes "
24. Wendy Belliston (1998-1999) "Modeling the Molybdenum Cofactor in DMSO Reductase: A Synthetic Approach to Molybdopterin"
25. Susan Ashton (1999-2000) "Modeling the Molybdenum Cofactor in DMSO Reductase"
26. Anne Braun (1999-2000) "Mono-Oxo Bis-Dithiolene Synthesis"
27. Whitney Drake (1999-2000) "Characterization and Study of a Molybdenum Cofactor Model by Cyclic Voltammetry"
28. Francine Morris (1999-2000) "Total Synthesis of Acetyl Ethynyl Pterin, The Closest Known Structural Mimic of Molybdopterin"
29. Calies Sauk-Schubert (1999-2000) "A Stereospecific Pyranopterin Model for Moco: Working towards an Oxo-Molybdenum Bound Complex"
30. Lindsay Alaishuski (2002-2003) "Ruthenium Phen-Pteridine Complexes Binding Interactions with DNA"
31. Laura Snyder (2003-2004) "Unusual Paramagetic Molybdenum Tris-Dithiolenenes"
32. Alanna Albano (2004-2005) "Analyzing the Binding Interactions of Ruthenium Pteridinyl Complexes to DNA "
33. Cara Blankenbicker (2004-2005) "Investigation of Unusual Paramagetic Molybdenum Tris-Dithiolenenes Compounds"
34. Alison Kim (2005-2006) "A New Approach to the Synthesis of a Model Compound for the Moco of Sulfite Oxidase"
35. Courtney Megatulski (2005-2006) "Synthesis and Characterization of Phenanthroline-Pteridines Chelated to Ru(II), Fe(II) and Cu(II)"
36. Shadia BelHamdounia(2005-2006) – "Improving the Structural Mimic of Molybdopterin"
37. Mary Kim –" The Molybdenum Cofactor: A Working Model"
38. Anna Merkle (2005-2006) – "Investigations of Unusual Magnetic properties of Molybdenum Tris-dithiolenes"
39. Rebecca Petit (2006-2007) — "Synthesis of Pterinyl Complexes to Model the Redox Behavior and Structure of the Molybdenum Cofactor"

## Honors Theses Supervised, cont.d

40. Amy Rothkopf (2006-2007) — "Modeling the Molybdenum Cofactor"
41. Lauren Dillon (2007-2008) — "Total Synthesis of Molybdenum Cofactor Models: Synthesis of 2-pivaloyl-6-alkynylpterins"
42. Tanya Michelle Corder (2007-2008) — "Models for the Molybdenum Cofactor"
43. Belinda Leung (2007-2008) — " Synthesis, Characterization and Analysis of Metal Pteridine Complex Derivatives"
44. Sanda Win (2007-2008) — "Investigation of DNA Intercalation by Ruthenium(II)-*bis*(Bipyridine)-Pteridinyl Complexes"
45. Erika Lippoldt (2008-2009)–"Synthesis and Characterization of Cu(II) and Co(III) Complexes of Pteridinyl Ligands and DNA Cleavage and Photocleavage Studies"
46. Rebecca Rothstein (2008-2009)— "The Quinoxaline-dithiolene System: An Effective Model for the Molybdenum Cofactor"
47. Liz Beilinski (2008-2010) — "Building A Model for the Molybdenum Cofactor"
48. Allison Shatz (2008-2010) — "An Investigation of the Photochemical and Electrochemical Properties of Ru(II)Pteridinyl Complexes"
49. Jenny Chen (2010-2011) – "Improving a Molybdenum Cofactor Model for a Class of Molybdenum Dithiolene Complexes"
50. Alex Gaudette (2010-2012) – "Exploration of unusual pteridine chemistry to synthesize novel ruthenium(II) complexes"
51. Meredith Skiba (2010-2012) –"Explorations into interactions between Ruthenium (II) Pteridine Complexes and DNA"
52. Yichun Fu (2011-2013) – "Understanding the Structures and Reactivity of Molybdenum Pterin Dithiolene Cofactor in Model Complexes"
53. Hannah Gilbert (2012-2013) – "Molybdenum Cofactor Modeling: Investigation of Steric Effects in Molybdopterin Dithiolene Complexes"
54. Diane Kim (2012-2013) – "Singlet Oxygen Release, Photocleavage Ability, and Level of Intercalation of Ruthenium Compounds with Pteridine ligands"
55. Juliana Quarterman (2012-2013) – "Synthesis and Investigations of Ruthenium Complex Photocleavage Abilities"
56. Stephanie Yang (2014-2015) — "An Investigation into the DNA Intercalating and DNA Photocleaving Properties of a Family of Ruthenium(II) Polypyridyl Complexes"
57. Ashley Zhu (2014-2015) – "Model Study of Pterin Oxidation States in Molybdenum Cofactors"
58. Alisha Esmail (2014-2015) – "A Variation of the Molybdenum Model Complex"
59. Kai Wang (2014-2015) – "Bioinorganic Investigation of the Photocleavage Properties & Interaction of Polypyridyl Ruthenium Complexes with DNA"
60. Alexandra Nagelski (2015-2017) – "Ptrials of Pterin Reduction in Synthetic Molybdenum Cofactor Models"
61. Haley Varnum (2016-2019) — "Modeling the Mononuclear Molybdenum Cofactor: Exploration of the Redox Reactivity of Protonation"
62. Catherine Getty (2019-2022) — "Investigations into Pyran Cyclization of the Molybdenum Cofactor through the Synthesis and Methylation of Model Complexes"
63. Angelina Rogatch (2022-2024) – "Pyranopterin and its Role in Enzymatic Catalysis: Investigating Ligand Non-Innocence"
64. Chelsea Free (2022-2024) – *in progress*
65. Chiara Zuccoli (2022-2024) – *in progress*

## Courses Taught

| | |
|---|---|
| **Intimate Interactions: Chemical Bonding CHEM105 | 2011 |
| **The Stuff of Art CHEM100/HART100 | 2004, 2006, 2010, 2012 |
| **Beauty CSEM / ENG (with Professor Anne Dalke) | 2005 |
| General Chemistry CHEM103 - | 1989 |
| General Chemistry CHEM103L - | 2006 |

## Courses Taught, cont.d

| | |
|---|---|
| General Chemistry CHEM104 - | 1993, 1995, 1997, 1999, 2001, 2002, 2003, 2005, 2007, 2009, 2010 |
| Inorganic Chemistry CHEM231/ Inorganic Chemistry Laboratory CHEM231L *(CHEM231L through 1998 only)* | 1986, 1987, 1988, 1989, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000, 2001, 2002, 2003, 2004, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022. 2023, 2024 |
| Inorganic Chemistry CHEM232/ Inorganic Chemistry Laboratory CHEM232L | 1986, 1987, 1988, 1989, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998 |
| **Research Methodology CHEM251/252 | 2004, 2006, 2009, 2011, 2015, 2020, 2023, 2024 |
| Advanced Inorganic Chemistry CHEM332/532 | 1993, 1995, 1997, 1998, 1999, 2001, 2008, 2011, 2012, 2014, 2016, 2019, 2021, 2023 |
| Group Theory CHEM535 | 1989, 1990, 1991, 1992, 1997, 1998, 2001, 2003, 2006, 2013, 2022 |
| Low Temperature Geochemistry GEO302 (*with Professor Maria Luisa Crawford*) | 1998 |
| #Theory and Experiment in Inorganic Chemistry (*with Professor Michelle Francl)* | 1987, 1992, 1996 |
| #Organometallic Chemistry CHEM534 (*with Professor Charles Swindell*)) | 1990 |
| **Organometallic Chemistry CHEM534 (*with Professor William Malachowski*)) | 2005 |
| **Molybdenum Enzymes: A Historical Tour CHEM332/532 (with Professor Susan White) | 2002 |
| **Advances in Spectroscopy (*with Keck Fellow Samantha Glazier*) | 2002 |
| **Advanced Spectroscopy CHEM 350/550 *(with Professor Jason Schmink)* | 2013 |

---

***denotes new course since promotion to full professor;*
*# denotes new course*