Sharon J. Nieter Burgmayer

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 magna cum laude	Heidelberg College, Tiffin, Ohio	1979

Professional Appointments

Research Grant Awards and Proposals

National Institutes of Health 2014-2018 $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
Sponsored by the Center for Science in Society 2002-2003 $10,000
and the Center for Visual Culture

10. "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.

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 $Mo_2(S_2CNEt_2)_3(\mu^2\text{-}CSC(S)S)(\mu^2\text{-}S_3C_2NEt_2)$"
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. "Simple Syntheses of 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 dπ 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 $Mo(RCCR)_2(S_2CNC$

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 Moly of EN(C)4 (om)17.1 (1.6 (s)-2Nol)-4.6-4 401 (s)-2N

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.

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

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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

15. "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"

2. "Unusual Ligand Formation in CS_2 Chemistry: Synthesis, Structure Reactivity of $Mo_2(S_2CNEt_2)_3(\mu^2\text{-}CSC(S)S)(\mu^2\text{-}S_3C_2NEt_2)$"
   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

Arche 36monA ( )

Total Synthesis of the Molybdenum Cofactor
Synthesis of Ruthenium Pteridine Complexes
DNA Photocleavage by Ruthenium Pteridine Complexes

Current Research Collaborators

Dr. Martin Kirk, Department of Chemistry, University of New Mexico
Dr. Patrick J. Carroll, Department of Chemistry, University of Pennsylvania
Dr. Glenn Yap, Department of Chemistry, University of Delaware

Post-Doctoral Associates

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

College Activities

Dean of Graduate Studies	2013-present	
Chair, GSSWSR Dean Search Committee	2016	
Convenor, GSSWSR Leadership Transition Committee	2015-2016	2013-present
Interim Dean of Graduate Studies	2013-	

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

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

w *(119*

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*1992)

"Building a Better Model for the Molybdenum Cofactor: A New Class of Molybdenum Dithiolene Complexes"

4. Shannon Dalton *(2007 - 2009)*
   "An Investigation of the Interactions between DNA and Family of Ruthenium(II) Pteridinyl Complexes"
5. Benjamin Williams (2010 – present)
   "Exploring Pteridine Chemistry in Two Bioinorganic Systems"
6. Samantha Klein (2010 – present, jointly supervised with Jonas Goldsmith)
7. Douglas Gisewhite (2014-present)

Undergraduate Research Supervised 1986-2006

	Period supervised *(external support)*
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 *(Dana fellowship)*
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	summer 1991 and 1992-1993
21. Audrey Ettinger	1991-1992
22. Katherine Erkkila	1991-1992
23. Lisa Ziemer	summers 1992, 1993 and 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 and 1993-1994
30. Martha Heintzelman	summer 1994, 1994-1995
31. John Murphy (Conestoga High School)	summer 1994
32. Jennifer Peterson	fall 1994
33. Judy Burke	1994-1995, *(Minority Women in Science Program)*
34. Sara Tuttle	semester II 1995, summer 1995, 1996-1997
35. Stephanie Eisenbarth	1994-1996
36. Laurie Schubert	summer 1995, 1995-1996

	Period supervised *(external support)*
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-

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
73. Laura Snyder	summers 2001 and 2002, 2002-2003 *(GE Faculty for the Future),* *Marshall Fellow 2003-2004.*
74. Kia Sh Towell	2001-2002 *(GE Faculty for the Future)*

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.

S. J. N. Burgmayer
December 2016

**The Stuff of Art CHEM100/HART100 2004, 2006, 2010, 2012