

6/9/2025

Michelle M. Franci

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Current Research Interests

Theoretical and computational chemistry; structures of topologically intriguing molecules; history and sociology of science; the rhetoric of science; chemistry of tea

Positions Held

Bryn Mawr College

Frank B. Mallory Professor of Chemistry	2018-present
Professor of Chemistry	2001-present
Chair, Department of Chemistry	2016-2020
Co-director, Emily Balch Seminar Program	2009-2012
Chair, Department of Chemistry	2005-2008, 2014
Director, Katharine Houghton Hepburn Center	2005-2007
Associate Professor of Chemistry	1992-2001
Assistant Professor of Chemistry	1986-1992

Other Appointments

Vatican Observatory (Adjunct Scholar)	2016-present
Beckman Center for the History of Chemistry (Herdeggen Fellow)	2012
Lawrence Livermore National Laboratory (Physicist)	1998-1999
Princeton University (Visiting Fellow)	1992-1993
James Franck Institute, University of Chicago (Visiting Fellow)	1992
Haverford College (Assistant Professor of Chemistry)	1985-1986

Education

Postdoctoral Fellow, Princeton University	1983-1985
Ph.D. (Chemistry), University of California, Irvine	1983
B.A. (Chemistry), University of California, Irvine	1979

Awards and Distinctions

American Chemical Society, Philadelphia Section Award	2019
Rosabeth Moss Kanter Change Master	2016
Professor of Chemistry on the Clowes Fund for Science and Public Policy	2012-2015
Fellow of the American Chemical Society	(elected in 2009)
McPherson Fellowship, Bryn Mawr College	2003

ISI List of Top 1000 Most Cited Chemists	1981-97
Christian R. and Mary F. Lindback Award	1994
Rosalyn R. Schwartz Lectureship	1987-1991

Professional Activities (2008-present)

Institute for Religion and Science, Advisory Board, 2015-present
 Advisory Board, Open Chemistry Collaborative in Diversity Equity (OXIDE) 2010-2022, board chair 2020-22
 Editorial Correspondent, *Distillations*, 2015-2019
 Editorial Board/Digital Advisory Board, *Chemical & Engineering News* American Chemical Society 2012-2017
 Editorial Advisory Board, *Chemical & Engineering News* (American Chemical Society) 2012-2016
 Journal of Contemplative Inquiry, Editorial Board, 2014
 Editorial Correspondent, *Chemical Heritage Magazine*, 2012-2014
 Board of Examiners, Chemistry GRE (2007-2011)
 Nominations & Elections Committee, American Chemical Society (2006-2008)
 Board Oversight Group on Leadership Development, American Chemical Society (2004-2009)

Bryn Mawr College Service (2008-present)

Grand Marshal 2020 Commencement (2021)
 Task Force on Transfer Students (2021)
 Data Science Steering Committee (2020-present)
 Committee on Appointments (2017-2021)
 Athena Cluster Steering Committee 2017-2018 (chair 2017)
 Board Working Group on Hell Week 2015
 Watson Fellowship Committee 2014
 Board Task Force on Digital Bryn Mawr, 2012-2013
 Graduate Director, Chemistry Department (1999-2002, 2003-04, 2014-2015)
 Committee on Libraries and Information Technology, 2011-2014 (chair 2012-14)
 Committee on Laboratories, 2012
 Curriculum Committee, 2009-2010
 College Seminar Steering Committee 1998-2008

Publications

Books:

Steeped: The Chemistry of Tea, M.M. Francl, Royal Society of Chemistry, 2024.
Writing Lab, in draft, a book of reflective writing exercises for students and practicing scientists
ACS Physical Chemistry Examination Study Guide, 2010, ACS Examinations Institute
A Survival Guide for Physical Chemistry, M.M. Francl, Physics Curriculum & Instruction Press, 2001.

Journal Articles, Op-Eds, Book Chapters and Invited Essays:

122. Pope Francis' approach to science and faith emphasized our duty to wield both with care, M. Francl-Donnay *Philadelphia Inquirer* 21 April 2025 <https://www.inquirer.com/opinion/commentary/pope-francis-catholic-science-climate-change-20250421.html>

121. Cutting NIH funding puts my life on the line, M. Franci-Donnay *Philadelphia Inquirer* 14 February 2025 <https://www.inquirer.com/opinion/commentary/nih-trump-science-research-grants-cuts-health-impacts-20250214.html>
120. Aliens among us, M.M. Franci, *Nature Chemistry*, **17**, 461-462 (2025).
119. Beyond grateful, M.M. Franci, *Nature Chemistry*, **17**, 2-3 (2025).
118. What if Marie Curie's greatest legacy was not her two Nobel prizes?, M. M. Franci, *Nature* **634**, 289-290 (2024).
117. Chemistry to hand, M.M. Franci, *Nature Chemistry*, **16**, 1567-1568 (2024).
116. The chemist who told us to put salt in our tea explains why she did it, M. M. Franci, *New Scientist*, 24 January 2024 <https://www.newscientist.com/article/2414348-the-chemist-who-told-us-to-put-salt-in-our-tea-explains-why-she-did-it/>
115. Steeped in chemistry, M. M. Franci, *Chemistry World* 24 January 2024 <https://www.chemistryworld.com/opinion/investigating-the-molecular-basis-of-a-nice-cup-of-tea/4018802.article>
114. WT¹⁹F, M.M. Franci, *Nature Chemistry*, **16**, 1-2 (2024).
113. Decentring the central science, *Nature Chemistry*, **15**, 1319-1320 (2023).
112. Folding up the questions, PRRUCS Journal, **3**, 129-133 (2023).
111. ChatGPT saves the day, M.M. Franci, *Nature Chemistry*, **15**, 890-891 (2023).
110. Poster children, M.M. Franci, *Nature Chemistry*, **15**, 1-2 (2023).
109. Heart of glass, M.M. Franci, *Nature Chemistry*, **14**, 717-718 (2022).
108. Drawing conclusions, M.M. Franci, *Nature Chemistry*, **14**, 1-2 (2022).
107. Molecular Backstories, *Nature Chemistry*, **13**, 923-924 (2021).
106. Hearing Voices, E. McCarver & M.M. Franci, *Nature Chemistry*, **13**, 615-617 (2021).
105. Cabinet of Curiosities, M.M. Franci, *Nature Chemistry*, **13**, 294-295 (2021).
104. Poetic Licence, M.M. Franci, *Nature Chemistry*, **13**, 3-4 (2021).
103. A Unit of Revolution, M.M. Franci, *Nature Chemistry*, **12**, 879-880 (2020).
102. From Permission to Poise, L.M. Balbes and M.M. Franci, in *Addressing the Gender Gap in Science*, ed. S. Azad, ACS Symposium Series #1354, (2020). 10.1021/bk-2020-1354
101. The invisible college, M.M. Franci, *Nature Chemistry*, **12**, 582-583 (2020).
100. A chemist's cup of tea, M.M. Franci, *Nature Chemistry*, **12**, 319-320 (2020).
99. Postcards from the past, M.M. Franci, *Nature Chemistry*, **12**, 1-3 (2020).
98. Sleeping with your Science, M.M. Franci, *Nature Chemistry*, **11**, 863-864 (2019).
97. Double Vision, M.M. Franci, *Nature Chemistry*, **11**, 597-598 (2019).
96. The Weight of Water, M.M. Franci, *Nature Chemistry*, **11**, 284-285 (2019)
95. Isotopic Enrichment, M.M. Franci, *Nature Chemistry*, **11**, 101-102 (2019).
94. Ephemeral Elements, M.M. Franci, *Nature Chemistry*, **11**, 2-4 (2019).
93. Five Books: Chemistry, with Caspar Henderson, <https://fivebooks.com/best-books/chemistry-michelle-franci/>
92. It's Alive, M.M. Franci, *Nature Chemistry*, **10**, 993-994 (2018).
91. Talking to Pauling's Ghost, M.M. Franci, *Nature Chemistry*, **10**, 688-689 (2018).
90. Atomic Women, M.M. Franci, *Nature Chemistry*, **10**, 373-375 (2018).
89. Making Molecular Monsters, M.M. Franci, *Nature Chemistry*, **10**, 1-2 (2018).

88. Identity crisis, M. M. Francel, *Nature Chemistry*, **9**, 606-607 (2017).
87. A Life in Science, M. M. Francel, *Distillations*, Spring 2017.
86. It figures, M. M. Francel, *Nature Chemistry*, **9**, 501-502 (2017).
85. Practically Impractical: Contemplative Practices in Science, *J. Contemplative Inquiry*, **3**, 21-34 (2016)
84. Chemists boldly go, M.J. Donnay and M. M. Francel, *Nature Chemistry*, **9**, 4-5 (2017).
83. A brief history of water, M. M. Francel, *Nature Chemistry*, **8**, 897-898 (2016).
82. Strangers to Fiction, M. M. Francel, *Nature Chemistry*, **8**, 636-637 (2016).
81. Changing chemistry by degrees, M. M. Francel, *Nature Chemistry*, **8**, 289-290 (2016).
80. Through the eyes of a chemist, M. M. Francel, *Nature Chemistry*, **8**, 1-2 (2016).
79. Hunting up the ghosts of elements, M. M. Francel, UN Year of Light, <http://light2015blog.org/2015/10/09/hunting-up-the-ghosts-of-elements/>
78. The enlightenment of chemistry, M. M. Francel, *Nature Chemistry*, **7**, 761-762 (2015).
77. Clickbait chemistry, M. M. Francel, *Chemical & Engineering News*, **93**, 17 Aug 2015, 13.
76. Chemical doublespeak, M. M. Francel, *Nature Chemistry*, **7**, 533-534 (2015).
75. Scents and sensibility, M. M. Francel, *Nature Chemistry*, **7**, 265-266 (2015).
74. Are corporations putting feathers in your food? *Slate*, 18 February 2015. (<http://slate.me/1FuvtR5>)
73. A molecule with a ring to it, M. M. Francel, *Nature Chemistry*, **7**, 6-7 (2015).
72. Border crossing. Review of What is Life? Addy Pross. M. M. Francel, *Chemical Heritage Magazine*, Fall 2014/Winter 2014.
71. Chemical leaveners, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 126-127
70. Biochemistry of sugar, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 667-669
69. Yeast, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 791-792
68. Sugar of lead, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 397
67. Food colorings, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 263-264
66. Starch, M.M. Francel in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 397.
65. Seeding crystallography, M. M. Francel, *Nature Chemistry*, **6**, 842-844 (2014).
64. The write stuff, M. M. Francel, *Nature Chemistry*, **6**, 555-556 (2014).
63. Attack of the clones, M. M. Francel, *Nature Chemistry*, **6**, 267-268 (2014).
62. Laughing matter, M. M. Francel, *Nature Chemistry*, **6**, 1-2 (2014).
61. Take a number, M. M. Francel, *Nature Chemistry*, **5**, 725-726 (2013).
60. How to counteract chemophobia, *Nature Chemistry*, **5**, 439-440 (2013).
59. Felony Science, M. M. Francel, *Slate*, 20 May 2013. (<http://slate.me/1bMRZAz>)
58. Tangible assets, M. M. Francel, *Nature Chemistry*, **5**, 147-148 (2013).

57. Don't take medical advice from the New York Times Magazine, M. M. Franci, *Slate*, 7 Feb 2013. (<http://slate.me/1c9vzj5>)
56. Naming Names, M.M. Franci, *Nature Chemistry*, **4**, 956-957 (2012).
55. To find fruit: A contemplative assessment of a 360 experience, M. M. Franci, *Teaching and Learning Together in Higher Education*, Fall 2012.
54. Homemade chemists, M.M. Franci, *Nature Chemistry*, **4**, 687-688 (2012). (Reprinted in 52. Chemical Heritage Magazine, Fall 2012.)
53. Chemical abstractions, M.M. Franci, *Nature Chemistry*, **4**, 427-428 (2012).
52. Zen and the art of molecules, M.M. Franci, *Nature Chemistry*, **4**, 142-144 (2012).
51. A quantum of history, M.M. Franci, *Nature Chemistry*, **3**, 902-903 (2011).
50. Sex and the citadel of science, M.M. Franci, *Nature Chemistry*, **3**, 670-673 (2011).
49. Spellbound by books, M.M. Franci, *Nature Chemistry*, **3**, 651-652 (2011).
48. Neolexia, M.M. Franci, *Nature Chemistry*, **3**, 417-418 (2011).
47. Blogging on the sidelines, M.M. Franci, *Nature Chemistry*, **3**, 183-184 (2011).
46. Selling science, M.M. Franci, *Nature Chemistry*, **2**, 999-1000 (2010).
45. Urban legends of chemistry, M.M. Franci, *Nature Chemistry*, **2**, 600-601 (2010).
44. Staging science, M.M. Franci, *Nature Chemistry*, **2**, 338-339 (2010)
43. Pressure to Preserve, M.M. Franci in *Open Laboratory 2009*, B. Zivkovic and Scicurious, eds., 2010.
42. Men of mystery, M.M. Franci, *Nature Chemistry*, **2**, 68-70 (2009).
41. Mapping the two cultures, M.M. Franci, *Nature Chemistry*, **1**, 591-592 (2009).
40. Back to basics, M.M. Franci, *Nature Chemistry*, **1**, 381 (2009).
39. Stretching topology, M.M. Franci, *Nature Chemistry*, **1**, 334-335 (2009).
38. Table manners, M.M. Franci, *Nature Chemistry*, **1**, 97-98 (2009).
37. Walking the Tightrope: Teaching the timeless fundamentals in the context of modern physical chemistry, M.M. Franci in *Advances in Teaching Physical Chemistry*; Ellison, M., Schoolcraft, T., Eds.; ACS Symposium Series 973; American Chemical Society: Washington, DC, 2007; pp 253-267.
36. CF₃ Rotation in 3-trimethylfluorophenanthrene: X-ray Diffraction and *ab initio* Electronic Structure Calculations, X. Wang, F.B. Mallory, C.W. Mallory, A.J. Rheingold, P.A. Beckmann, M.M. Franci, *J. Phys. Chem. A*, **110**, 3954-3960 (2006).
35. A Theoretical Study of the Reduction Of Carbonyls By Alkylaluminum Complexes, J.W. Bundens, P.R. Seida, D. Jeyakumar and M.M. Franci, *Journal of Molecular Graphics and Modeling*, **24**, 195-202 (2005).
34. Crossing the Line: Stochastic Methods in the Chemistry Curriculum, M.M. Franci in *Annual Reports in Computational Chemistry* v. 1, ed. D. Spellmeyer, Elsevier, 2005.
33. Elemental MoThEr. M. M. Franci, in *Parenting and Professing: Balancing Family Work with an Academic Career*, ed. Rachel Hile-Basset, Vanderbilt University Press, June 2005.
32. Introduction to Statistical Mechanics, M.M. Franci, *Journal of Chemical Education*, **82**, 175 (2005).
31. Exploring Exotic Kinetics: An Introduction to the Use of Numerical Methods in Chemical Kinetics, M. M. Franci *Journal of Chemical Education*, **81**, 1535 (2004).

30. An Ab Initio MO Study of the Symmetric And Asymmetric Isomers of Bridging Alkynylaluminum and Alkynylberyllium Dimers, P. R. Seida, J.W. Bundens, M.M. Francel, *International Journal of Quantum Chemistry*, **95**, 806-809 (2003).
29. Nuclear Spin-Spin Coupling via Nonbonded Interactions. 8.1 The Distance Dependence of Through-Space Fluorine-Fluorine Coupling, F.B. Mallory, C.W. Mallory, K.E. Butler, M.B. Lewis, A.Q. Xia, E.D. Luzik, Jr., L.E. Fredenburgh, M.M. Ramanjulu, Q.N. Van, M.M. Francel, D.A. Freed, C.C. Wray, C. Hann, M. Nerz-Stormes, P.J. Carroll, and L.E. Chirlian, *J. Amer. Chem. Soc.* **122**, 4108-4116 (2000).
28. The Pluses and Minuses of Mapping Atomic Charges to Electrostatic Potentials, M.M. Francel and L.E. Chirlian, in *Rev. in Computational Chem.* **14**, 1-31 (2000).
27. Transition States for the Carboalumination of Alkene and Alkynes, J.W. Bundens, J. Yudenfreund and M.M. Francel, *Organometallics* **18**, 3913-3920 (1999).
26. Beyond CHELP: Improved Potential Derived Charges for Sugars, C. Carey, L.E. Chirlian, D. Gange and M.M. Francel, *Glycoconjugate Journal* **14**, 501-505 (1997).
25. Charges Fit to Electrostatic Potentials II: Can Atomic Charges be Unambiguously Fit to Electrostatic Potentials?, C. Carey, L.E. Chirlian, D. Gange and M.M. Francel, *J. Comp. Chem.* **17**, 367-383 (1996).
24. Competing C-Br and C-C Bond Fission following $^1n(O)-\pi^*(C=O)$ Excitation in Bromoacetone: Conformation Dependence of Nonadiabaticity at a Conical Intersection, P.W. Kash, G. C. G. Waschewsky, R.E. Morris, L. J. Butler, M. M. Francel, *J. Chem. Phys.* **100**, 3463-3475 (1994).
23. NMR And Molecular Modeling Study Of Active And Inactive Taxol Analogs In Aqueous And Nonaqueous Solution, H.J. Williams, A.I. Scott, R.A. Dieden, C.S. Swindell, L.E. Chirlian, M.M. Francel, J.M. Heerding, N.E. Krauss, *Can. J. Chem.* **72**, 252-260 (1994).
22. Distance Dependence of Nonadiabaticity in the Branching Between C-Br and C-Cl Bond Fission following $^1[n(O), \pi^*(C=O)]$ Excitation in Bromopropionyl Chloride, P.W. Kash, G. C. G. Waschewsky, L. J. Butler, M. M. Francel, *J. Chem. Phys.* **99**, 4479-4494 (1993).
21. NMR and Molecular Modeling Study of the Conformations of Taxol and of its Side Chain Methylester in Aqueous and Non-Aqueous Solution, H.J. Williams, A.I. Scott, R.A. Dieden, C.S. Swindell, L.E. Chirlian, M.M. Francel, J.M. Heerding, N.E. Krauss, *Tetrahedron* **49**, 6545-6569 (1993).
20. Transition States for Hydroalumination of Alkenes and Alkynes: Ab Initio Molecular Orbital Studies, J.W. Bundens and M. M. Francel *Organometallics* **12**, 1608-1615 (1993).
19. Computational Studies of Structure and Bonding in Organoaluminum Complexes, A. Shaw, P.R. Seida, J.W. Bundens and M.M. Francel in *Topics in Physical Organometallic Chemistry*, vol. 4, pg. 353-393 (1992).
18. A Theoretical Investigation of Aluminum-Oxygen -Bonding in 3- and 4-Coordinate Aluminum Alkoxides, A. R. Barron, K. D. Dobbs and M. M. Francel, *J. Amer. Chem. Soc.* **113**, 39-43 (1991).
17. 1-Oxabicyclobutonium Ions Can Intervene in Epoxycarbonyl and 3-Oxetanyl Solvolysis, M.M. Francel, G. Hansell, B.P. Patel and C.S. Swindell, *J. Amer. Chem. Soc.* **112**, 3535-3539 (1990).
16. The N_4 Molecule and its Metastability, M.M. Francel and J.P. Chesick, *J. Phys. Chem.* **94**, 526-528 (1990).

15. π - complexes of Alkenes to Trivalent Aluminum, J. Chey, H.S. Choe, Y.M. Chook, E. Jensen, P.R. Seida and M.M. Francl, *Organometallics* **9**, 2430-36 (1990).
14. Isomers of Nitric Acid and Chlorine Nitrate, M.P. McGrath, M.M. Francl, F.S. Rowland and W.J. Hehre, *J. Phys. Chem.* **92**, 5352-5357 (1988).
13. Phosphoranes: Bond Characterization and Substituent Effects, M.M. Francl, R.C. Pellow and L.C. Allen, *J. Amer. Chem. Soc.* **110**, 3723-3728 (1988).
12. The Stability of Rotational Transition Structures in Substituted Amides, K.T. Lim and M.M. Francl, *J. Phys. Chem.* **91**, 2716-2721 (1987)
11. Charges Fit to Electrostatic Potentials, L.E. Chirlian and M.M. Francl, *J. Comp. Chem.* **8**, 894-905 (1987).
10. Anionic Hyperconjugation, D.S. Friedman, M.M. Francl and L.C. Allen, *Tetrahedron* **41**, 499-506 (1985).
9. Polarization Corrections to Electrostatic Potentials, M.M. Francl, *J. Phys. Chem.* **89**, 428-433 (1985).
8. Role of Active-Site Residues and Solvation in RNase-A, C. Brooks III, A. Brunger, M.M. Francl, K. Haydock, L.C. Allen and M. Karplus, *Ann. N.Y. Acad. Sci.* **471**, 295-298 (1986).
7. Representation of Electron Densities. 1. Sphere Fits to Total Electron Density Surfaces, M.M. Francl, R.F. Hout, Jr., and W.J. Hehre, *J. Amer. Chem. Soc.* **106**, 563-570 (1984).
6. Conformational Preferences in Mo₂L₆ Complexes, K.D. Dobbs, M.M. Francl and W.J. Hehre, *Inorg. Chem.* **23**, 24-26 (1984).
5. The Structure of the Tebbe Reagent. An Intramolecular Complex?, M.M. Francl and W.J. Hehre, *Organomet.* **2**, 457-459 (1983).
4. Hyperconjugation and the Structures of Metal Carbenes, M.M. Francl, W.J. Pietro, R.F. Hout, Jr., and W.J. Hehre, *Organometallics* **2**, 281-286 (1983).
3. Conformational Preferences in Transition Metal Carbenes, M.M. Francl, W.J. Pietro, R.F. Hout, Jr. and W.J. Hehre, *Organometallics* **2**, 815-818 (1983).
2. Self-Consistent Molecular Orbital Methods. 24. Supplemented Small Split-Valence Basis Sets for Second Row Elements, W.J. Pietro, M.M. Francl, W.J. Hehre, J.S. Binkley, D.J. DeFrees, and J.A. Pople *J. Amer. Chem. Soc.* **104**, 5039-5048 (1982).
1. Self-Consistent Molecular Orbital Methods. 23. A Polarization Basis Set for Second Row Elements, M.M. Francl, W.J. Pietro, W.J. Hehre, J.S. Binkley, D.J. DeFrees, J.A. Pople and M.S. Gordon, *J. Chem. Phys.* **77**, 3654-3665 (1982).

Reviews:

“Library Notes” (Literature Reviews) , M. M. Francl, *Chemical Design and Automation News*
 June 1993, September 1993, April 1994, June 1994 , Fall 1994, January/February 1995, August 1995, January/February 1996, Fall 1996

Research Computer Programs:

- Gaussian 85, R.F. Hout, Jr., M.M. Francl, N. Blurock, W.J. Pietro, S.K. Pollack, D.J. DeFrees, B.A. Levi, R. Steckler, W.J. Hehre.
- Mephisto, M.M. Francl, Quantum Chemistry Program Exchange, Program 490, 1984.
- CHELP, L.E. Chirlian and M.M. Francl, Quantum Chemistry Program Exchange, Program 594, 1988.

- Quantum Chemistry Graphics Archive, P.R. Seida and M.M. Francel, 1990.
- MOPC, P.R. Seida and M.M. Francel, Quantum Chemistry Program Exchange, Program QCMP090, 1991.
- CHELP-SVD, L.E. Chirlian and M.M. Francel, 1996.

Curricular Materials:

1. "Introduction to the Use of Numerical Methods in Chemical Kinetics", M.M. Francel, *MathSource*, Wolfram, Inc, 2000. www.mathsource.com
2. "Introduction to Statistical Mechanics", M.M. Francel, *MathSource*, Wolfram, Inc, 2000. www.mathsource.com
3. "Exploring Exotic Kinetics: An Introduction to the Use of Numerical Methods in Chemical Kinetics" M. M. Francel, c. 2004, available from *JCE SymMath* at <http://jchemed.chem.wisc.edu/JCEDLib/SymMath/collection/index.html> (Please note this material is peer reviewed.)
4. "An Introduction to Statistical Mechanics" M. M. Francel, c. 2005 available from *JCE SymMath* at <http://jchemed.chem.wisc.edu/JCEDLib/SymMath/collection/index.html> (Please note this material is peer reviewed.)
5. "P-Chem with a Purpose" funded by NSF-DUE:

P-Chem with a Purpose chapters:

Miniature Machines: "Pulling" Nanowires
 Frog Antibiotics: Statistical Mechanics of Helix-Coil Transitions
 Ancient Ostrich Eggs: Dating Materials By Amino Acid Racemization
 Quantum Dots: Particle-on-a-sphere model for Buckminsterfullerene
 Using Chemistry to Uncover a History: Is this an early map of North America – or not?
 Exotic Kinetics: Oscillating Reactions in the Atmosphere

Overview at <http://www.brynmawr.edu/Acads/Chem/NSFpchem/>

Modules at <http://www.brynmawr.edu/Acads/Chem/NSFpchem/DraftModules.html>

Web Materials:

Short essays on aspects of chemistry. <http://cultureofchemistry.blogspot.com>
 Approximate circulation: 700 readers per week.

Recent conference presentations, workshops and invited lectures

"Chemistry of Tea" University of Pennsylvania Library, April 2025
 "Chemistry of Tea" New Haven Section ACS, March 2025
 "Chemistry of Tea" Swarthmore, March 2025
 "Chemistry of Tea" Quadrangle, February 2025
 "Chemistry of Tea" Hamilton College, February 2025
 remarks, 2025 IUPAC Global Women Breakfast (GWB) Universidad Nacional de Colombia February 2025
 "Steeped: The Chemistry of Tea" Joseph Priestly Society, Science History Institute, December 2024
 "Chemistry of Tea" Temple University, School of Pharmacy December 2024

“Chemistry of Tea” Sciencepalooza November 2024
“Coding the Universe” Judith O’Brien Lecture, University of Rochester
“Chemistry of Tea” Nashville Section ACS September 2024
“Chemistry of Tea” Vanderbilt University September 2024
“A Molecular Tea Party” Chestnut Hill College, September 2024
“Chemistry of Tea” Temple University, Department of Chemistry September 2024
“Chemistry of Tea” Ambler Public Library June 2024
“Chemistry of Tea” Philadelphia ACS Section June 2024
“The secret life of tea” Main Line School Night, April 2024
“Spilling the tea: putting chemistry into context” Interdisciplinary Science Communication Workshop, CSU, April 2024
“Steeped in the chemistry of tea” AIChE Michigan Section, 22 February 2024
“Chemistry of Tea” Chemistry World webinar 15 February 2024
“Chemistry of Tea” Vatican Observatory 25 January 2024
“Lessons Learned: Opportunities for the Future” panel moderator, American Philosophical Society, October 2023
“Simply unmoored: The rejection of complexity in quantum mechanical explanations of chemical phenomena” Fourth Annual Thomistic Philosophy and Natural Science Symposium: Complexity, Simplicity, and Emergence” July 2022
“Folding up the questions” Collegium, June 2022.
“Steeped: The chemistry of tea” Bryn Mawr reunion, May 2022
“To boldly go where no woman has gone before” Roger That! Conference, March 2022
“Commuting Operators: Moving Between the Humanities and Sciences.” Pennswood Village Forum, February 2022
“The Write Stuff: Science writing beyond the journal article” University of Albany, November 2021
“Molecular Monsters: Designing molecules with Möbius structural topology” Queens College, May 2021
“Probing the Shallows of the Unknown” Collegium Institute, UPenn, April 2021
Steal Her Bones Talkback, InterAct Theatre Company, Philadelphia, PA, February 2021
“Amid the Burning Layers of Grace: A Contemplative Approach to Science” Rockhurst University, 28 October 2020
Award Lecture, ACS Philadelphia Section Award, October 2019
“Molecular Monsters: Designing molecules with Möbius topology” Wake Forest University, February 2020
“Isotopic Enrichment” Mendeleev 150, St. Petersburg, Russia, July 2018 invited paper
“Making Molecular Monsters” Siena College, October 2018.
“Practical Notes: On developing a writing practice for working chemists” invited paper at American Chemical Society National Meeting, March 2018
“Designing twisted cages: molecular hosts with Möbius topology” Boston College, December 2017
“The Good, the Bad, the Chemistry” Wagner Science Museum, Philadelphia, November 2017
“Molecules that Misbehave” Keynote, Lucian Symposium, St. Edwards, Austin, TX, September 2017
“Identity” Platform speaker, March for Science, Philadelphia, April 2017
“Making the bones of chemistry visible” invited paper at American Chemical Society National Meeting,

August 2016

- “Model(ing) chemistry departments: A computational exploration of diversity and discovery” invited paper at American Chemical Society National Meeting, August 2016
- “Talking science” VOSS 2016, Rome, June 2016
- “One-sided stories: [n]Möbiusenes/Topologies” Mt. Holyoke College, March 2016
- “Combatting chemophobia and pseudoscience” AAAS, February 2016
- “How to work at the subtle edge: What contemplatives can teach scientists” Meditatio, TechnoScience and Humanity Conference, Barcelona, October 2015
- “Topologically intriguing molecules” Vatican Observatory, October 2015
- “Teaching research students how to write like a chemist” NSF REU PI Workshop, July 2015
- “A twist in the tale: [n]Möbiusenes” Wesleyan University, February 2015
- “Behold: engaging visual materials” (workshop) Wesleyan University, February 2015
- “Engaging science” (workshop) Selkirk College, Canada, July 2013
- “Practically impractical” Chestnut Hill College, October 2014
- “Twisted tales: [n]Möbiusenes” St. Catherine University, February 2014
- “Parenting and Professing” St. Catherine University, February 2014
- “Scientists Writing Science: Beyond Grant Proposals, Journal Articles and Internal Reports” Association for Women in Science, October 2013
- “Writing like a chemist” (keynote lecture/workshop) American Chemical Society National Meeting, April 2013
- “Practically impractical: impractically practical” Creighton University, March 2013
- "At the Intersect of Religion and Science" Franklin Institute, October 2012
- "At the Intersect of Religion and Science" Franklin Institute, Dead Sea Scrolls Lecture Series, July 2012
- “Sex in the Citadel of Science: Do We Build Women Out of the Laboratory?” Gender Body and Technology Conference, April 2012
- "Warped Chemistry: Topologically Intriguing Molecules" McNulty Lecture, St. Joseph's University, March 2012
- “Trolling for Comments: How Authors, Bloggers, and Trolls Wrangle with the Chemical Literature” Chemical Heritage Foundation, February 2012
- "Stealing Time to Teach: Contemplative Approaches to Teaching and Learning" Ursinus College, March 2012
- “The Science Lab: A Man Cave?” Rosalind Franklin Society, December 2011.
- “Molecules with a twist” Nanyang Technical University, October 2011
- "Writing, Contemplative Practices and the Whole Person" keynote presentation at Writing and the Contemplative Mind conference, George Mason University, October 2011. (<http://www.youtube.com/watch?v=hCDgmQtFNCI>)
- “Contemplative Practices in the Sciences” Amherst College, March 2011 (<http://vimeo.com/36979176>)

Courses Taught (2013-present)

Emily Balch Seminar (F18, F22)

360: Silent Spaces: History of Contemplation in the West (F10, F13, F16)

Problem Solving (S24)

General Chemistry I (F14, F21,F22,F23)
General Chemistry II (S14, S15, S16, S17, S18, S19, S20, S22,S23,S24)
Physical Chemistry I (F13, F14, S16, F16, F17, F18, F21, F22, F23)
Physical Chemistry II (S15)
Advanced Quantum Chemistry (Graduate Course) (S15)
Research Methodology (S17, S18, S21, S22)
Writing Science (S21)
Praxis III (S21)

Research Students supervised (2013-present)

Fay Koyfman ('24, chemistry)
Yesenia Hernandez ('23, chemistry, math)
Emma Fiorini ('22, chemistry)
Alyssa Kwon ('22, chemistry)
Jenna Margolis ('22, biology/creative writing)
Connie Chan (AB '19, chemistry)
Nazifa Tabassum (AB '18, chemistry)
Alanna Goldberg (AB '19, chemistry)
Brigid Kohno (AB '17, chemistry)
Jae Hyun Ha (AB '15/chemistry)
Samantha Silbert (AB '15/chemistry)
Christopher Donnay (visiting student/computer science)
Sharaai Marrero (AB '13/chemistry)
Camilla Montonen (AB '13/math major)