

12/20/2023

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

Institute for Religion and Science, Advisory Board, 2015-present

110. Poster children, M.M. Francl, *Nature Chemistry*, , 1-2 (2023).
109. Heart of glass, M.M. Francl, *Nature Chemistry*, , 717-718 (2022).
108. Drawing conclusions, M.M. Francl, *Nature Chemistry*, , 1-2 (2022).
107. Molecular Backstories, *Nature Chemistry*, , 923-924 (2021).
106. Hearing Voices, E. McCarver & M.M. Francl, *Nature Chemistry*, , 615-617 (2021).
105. Cabinet of Curiosities, M.M. Francl, *Nature Chemistry*, , 294-295 (2021).
104. Poetic Licence, M.M. Francl, *Nature Chemistry*, , 3-4 (2021).
103. A Unit of Revolution, M.M. Francl, *Nature Chemistry*, , 879-880 (2020).
102. From Permission to Poise, L.M. Balbes and M.M. Francl, 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. Francl, *Nature Chemistry*, , 582-583 (2020).
100. A chemist's cup of tea, M.M. Francl, *Nature Chemistry*, , 319-320 (2020).
99. Postcards from the past, M.M. Francl, *Nature Chemistry*, , 1-3 (2020).
98. Sleeping with your Science, M.M. Francl, *Nature Chemistry*, , 863-864 (2019).
97. Double Vision, M.M. Francl, *Nature Chemistry*, , 597-598 (2019).
96. The Weight of Water, M.M. Francl, *Nature Chemistry*, , 284-285 (2019)
95. Isotopic Enrichment, M.M. Francl, *Nature Chemistry*, , 101-102 (2019).
94. Ephemeral Elements, M.M. Francl, *Nature Chemistry*, , 2-4 (2019).
93. Five Books: Chemistry, with Caspar Henderson, <https://fivebooks.com/best-books/chemistry-michelle-francl/>
92. It's Alive, M.M. Francl, *Nature Chemistry*, , 993-994 (2018).
91. Talking to Pauling's Ghost, M.M. Francl, *Nature Chemistry*, , 688-689 (2018).
90. Atomic Women, M.M. Francl, *Nature Chemistry*, , 373-375 (2018).
89. Making Molecular Monsters, M.M. Francl, *Nature Chemistry*, , 1-2 (2018).
88. Identity crisis, M. M. Francl, *Nature Chemistry*, , 606-607 (2017).
87. A Life in Science, M. M. Francl, *Distillations*, Spring 2017.
86. It figures, M. M. Francl, *Nature Chemistry*, , 501-502 (2017).
85. Practically Impractical: Contemplative Practices in Science, *J. Contemplative Inquiry*, , 21-34 (2016)
84. Chemists boldly go, M.J. Donnay and M. M. Francl, *Nature Chemistry*, , 4-5 (2017).
83. A brief history of water, M. M. Francl, *Nature Chemistry*, , 897-898 (2016).
82. Strangers to Fiction, M. M. Francl, *Nature Chemistry*, , 636-637 (2016).
81. Changing chemistry by degrees, M. M. Francl, *Nature Chemistry*, , 289-290 (2016).
80. Through the eyes of a chemist, M. M. Francl, *Nature Chemistry*, , 1-2 (2016).
79. Hunting up the ghosts of elements, M. M. Francl, UN Year of Light, <http://light2015blog.org/2015/10/09/hunting-up-the-ghosts-of-elements/>
78. The enlightenment of chemistry, M. M. Francl, *Nature Chemistry*, , 761-762 (2015).
77. Clickbait chemistry, M. M. Francl, *Chemical & Engineering News*, , 17 Aug 2015, 13.
76. Chemical doublespeak, M. M. Francl, *Nature Chemistry*, , 533-534 (2015).
75. Scents and sensibility, M. M. Francl, *Nature Chemistry*, , 265-266 (2015).

74. Are corporations putting feathers in your food? *Slate*, 18 February 2015. (<http://slate.me/1FvvtR5>)
73. A molecule with a ring to it, M. M. Francl, *Nature Chemistry*, , 6-7 (2015).
72. Border crossing. Review of What is Life? Addy Pross. M. M. Francl, *Chemical Heritage Magazine*, Fall 2014/Winter 2014.
71. Chemical leaveners, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 126-127
70. Biochemistry of sugar, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 667-669
69. Yeast, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 791-792
68. Sugar of lead, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 397
67. Food colorings, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 263-264
66. Starch, M.M. Francl in *Oxford Companion to Sugar and Sweets*, ed. D. Goldstein, Oxford University Press, 2015. p 397.
65. Seeding crystallography, M. M. Francl, *Nature Chemistry*, , 842-844 (2014).
64. The write stuff, M. M. Francl, *Nature Chemistry*, , 555-556 (2014).
- 63.

43. Pressure to Preserve, M.M. Francl in *Open Laboratory 2009*, B. Zivkovic and Scicurious, eds., 2010.
42. Men of mystery, M.M. Francl, *Nature Chemistry*, , 68-70 (2009).
41. Mapping the two cultures, M.M. Francl, *Nature Chemistry*, , 591-592 (2009).
40. Back to basics, M.M. Francl, *Nature Chemistry*, , 381 (2009).
39. Stretching topology, M.M. Francl, *Nature Chemistry*,

- Kash, G. C. G. Waschewsky, R.E. Morris, L. J. Butler, M. M. Francl, *J. Chem. Phys.*, **101**, 3463-3475 (1994).
23. NMR And Molecular Modeling Study Of Active And Inactive Conformations In Aqueous And Nonaqueous Solution, H.J. Williams, A.I. Scott, R.A. Dieden, C.S. Swindell, L.E. Chirlan, M.M. Francl, 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. Francl, *J. Chem. Phys.*, **99**, 4479-4494 (1993).
21. NMR and Molecular Modeling Study of the Conformations of Taxol and of its Side Chain Methylene Ester in Aqueous and Non-Aqueous Solution, H.J. Williams, A.I. Scott, R.A. Dieden, C.S. Swindell, L.E. Chirlan, M.M. Francl, 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. Francl *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. Francl 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. Francl, *J. Amer. Chem. Soc.*, **113**, 39-43 (1991).
17. 1-Oxabicyclobutonium Ions Can Interconvert with Carbonyl and 3-Oxetanyl Solvolysis, M.M. Francl, G. Hansell, B.P. Diederichs, C.S. Swindell, *J. Amer. Chem. Soc.*, **112**, 3535-3539 (1990).
16. The N_4 Molecule and its Metastability, M.M. Francl and J.P. Chesick, *J. Phys. Chem.*, **94**, 526-528 (1990).
15. π -complexes of Alkenes to Trivalent Aluminum (1991).

5. The Structure of the Tebbe Reagent. An Intramolecular Complex?, M.M. Francl and W.J. Hehre, *Organomet.* , 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* , 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* , 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.* , 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.* , 3654-3665 (1982).

Books:

Writing Lab, in draft, a book of reflective writing exercises for students and practicing scientists

4. “An Introduction to Statistical Mechanics” M. M. Francl, 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.

“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

Emily Balch Seminar (F18, F22)

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

General Chemistry I (F14, F21,F22,F23)

General Chemistry II (S14, S15, S16, S17, S18, S19, S20, S22,S23)

Physical Chemistry I (F13, F14, S16, F16, F17, F18, F21, F22, F23)

Physical Chemistry II (S15)