

**Margaret W. Frey, Ph.D.,
Professor, Fiber Science**

<http://www.human.cornell.edu/bio.cfm?netid=mfw24>

<http://www.linkedin.com/pub/margaret-frey/a/5b1/33b>

Education:

Cornell University	Chemical Engineering	B.S. 1985
Cornell University	Fiber Science	M.S. 1989
North Carolina State University	Fiber and Polymer Science	Ph.D.1995

Positions Held:

Interim Department Chair, Department of Fiber Science & Apparel Design, College of Human Ecology, Cornell University (12/18-present).

Senior Associate Dean for Undergraduate Affairs, College of Human Ecology, Cornell University (January 2015 – present).

Professor, Department of Fiber Science & Apparel Design, Cornell University (July 2015 – present).

Director of Undergraduate Studies, Department of Fiber Science & Apparel Design, Cornell University (February 2014 – August 2015).

Director of Graduate Studies, Department of Fiber Science & Apparel Design, Cornell University (August 2009 – August 2013).

Associate Professor, Department of Fiber Science & Apparel Design, Cornell University (July 2008 – July 2015).

Lois and Mel Tukman Assistant Professor, Department of Fiber Science & Apparel Design, Cornell University (2005-2008).

Assistant Professor, Department of Textiles and Apparel, College of Human Ecology, Cornell University (July 2002-July 2008).

Manager of Material Development, Champlain Cable Corporation, (January 1998 – April 2002).

Materials Specialist, Johnson Filaments, (June 1995 – December 1997).

Technical Specialist, Helene Curtis Industries, (August 1988-August 1990).

Staff Scientist, TRI Princeton, (July 1987-August 1988).

Publications (Refereed): Citations: 1873, H index: 24 (1/1/18)

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58. Xiao, M., J. Chery, and M.W. Frey, Functionalization of Electrospun Poly (vinyl alcohol)(PVA) Nanofiber Membranes for Selective Chemical Capture. *ACS Applied Nano Materials*, 2018. 1(2): p. 722-729.
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56. Xiao, M., Chery, J., Keresztes, I., Zax, D. B., & Frey, M. W. (2017). Direct characterization of cotton fabrics treated with di-epoxide by nuclear magnetic resonance. *Carbohydrate Polymers*, 174, 377-384. doi: 10.1016/j.carbpol.2017.06.077
55. Gonzalez, E., & Frey, M. W. (2017). Synthesis, characterization and electrospinning of poly(vinyl caprolactam-co-hydroxymethyl acrylamide) to create stimuli-responsive nanofibers. *Polymer*, 108, 154-162. doi: 10.1016/j.polymer.2016.11.053
54. Shepherd, L. M., Frey, M. W., & Joo, Y. L. (2017). Immersion Electrospinning as a New Method to Direct Fiber Deposition. *Macromolecular Materials and Engineering*, 302(10). doi: 10.1002/mame.201700148.
53. Guzman J. J. L., Pehlivanar Kara M. O., Frey M. W. and Angenent L. T. (2017). Performance of electro-spun carbon nanofiber electrodes with conductive poly(3,4-ethylenedioxythiophene) coatings in bioelectrochemical systems. *Journal of Power Sciences*, 356, 331-337. doi: 10.1016/j.jpowsour.2017.03.133.
52. Reyes, C. G. and M. W. Frey (2017). "Morphological traits essential to electrospun and grafted nylon-6 nanofiber membranes for capturing submicron simulated exhaled breath aerosols." *Journal of Applied Polymer Science*, 134(17). doi: 10.1002/app.44759.
51. Larissa M. Shepherd, Edurne González, Esther X. Chen, and Margaret W. Frey, Increasing Stability of Biotin Functionalized Electrospun Fibers for Biosensor Applications, *ACS Applied Materials & Interfaces* 9(2), 1968-1974. doi: 10.1021/acsami.6b14348.
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42. Xiang, C., Frey, M.W., 'Hydrolytic Degradation of Nanocomposite Fibers Electrospun from Poly(Lactic Acid)/Cellulose Nanocrystals' in *Cellulose Based Composites: New Green Nanomaterials*, Hinestroza, J. and Netravali, A. eds. 2014

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24. Buyuktanir, E.A., M.W. Frey, and J.L. West, Self-assembled, optically responsive nematic liquid crystal/polymer core-shell fibers: Formation and characterization. *Polymer*, **2010**. 51(21): p. 4823-4830.
23. Sohn, A.M., Henderson, P. W. , Koppius, A.; Reiffel, A. J., Bonassar, L., Frey, M.W.; Spector, J. A., Endothelialization of Sacrificial Polymer-Derived Vascular Channels: Advancement towards the Creation of Surgically Relevant Tissue Replacements. *Plastic and Reconstructive Surgery*, **2010**. 126: p. 58.
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20. Xiao, M. and M.W. Frey, *Rheological Studies of the Interactions in Cellulose/Ethylene Diamine/Salt Systems*. Journal of Polymer Science Part B-Polymer Physics, **2008**. **46**(21): p. 2326-2334.
19. Frey, M.W., *Electrospinning cellulose and cellulose derivatives*. Polymer Reviews, **2008**. **48**(2): p. 378-391.
18. Xiao, M. and M.W. Frey, *The role of salt on cellulose dissolution in ethylene diamine/salt solvent systems*. Cellulose, **2007**. **14**(3): p. 225-234.
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16. Li, D., Frey M.W., Vynias, D., Baeumner A. J., *Availability of biotin incorporated in electrospun PLA fibers for streptavidin binding*. Polymer, **2007**. **48**(21): p. 6340-6347.
15. Frey, M.W. and L. Li, *Electrospinning and Porosity Measurements of Nylon-6/Poly(ethylene oxide) Blended Nonwovens*. Journal of Engineered Fibers and Fabrics, **2007**. **2**(1): p. 31-37.
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10. Li, D.P., M.W. Frey, and A.J. Baeumner, *Electrospun polylactic acid nanofiber membranes as substrates for biosensor assemblies*. Journal of Membrane Science, **2006**. **279**(1-2): p. 354-363.
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8. Frey, M.W., H. Chan, and K. Carranco, *Rheology of cellulose/KSCN/ethylenediamine solutions and coagulation into filaments and films*. Journal of Polymer Science Part B-Polymer Physics, **2005**. **43**(15): p. 2013-2022.
7. Frey, M.W. and M.H. Theil, *Calculated phase diagrams for cellulose/ammonia/ammonium thiocyanate solutions in comparison to experimental results*. Cellulose, **2004**. **11**(1): p. 53-63.

6. Cuculo J. A., N. Aminuddin and M.W. Frey “*Solvent Spun Cellulose Fibers*”, J. A in *Structure Formation in Polymeric Fibers*, 296-328, D.R. Salem Ed., Hanser Publishers: Munich (2000).
5. Frey, M.W., J.A. Cuculo, and R.J. Spontak, *Morphological characteristics of the lyotropic and gel phases in the cellulose/NH₃/NH₄SCN system*. Journal of Polymer Science Part B-Polymer Physics, **1996**. **34**(12): p. 2049-2058.
4. Frey, M.W., J.A. Cuculo, and S.A. Khan, *Rheology and gelation of cellulose/ammonia/ammonium thiocyanate solutions*. Journal of Polymer Science Part B-Polymer Physics, **1996**. **34**(14): p. 2375-2381.
3. Frey, M.W., Cuculo, J.A., Ciferri, A., Theil, M.H., *A Review of Lattice Theory for Lyotropic Liquid-Crystalline Polymers, Spinodal Decomposition, and Gel Formation*. Journal of Macromolecular Science-Reviews in Macromolecular Chemistry and Physics, **1995**. **C35**(2): p. 287-325.

Publications (Non-Refereed):

2. H. S. Whang, N. Aminuddin, M. Frey, S. M. Hudson*, and J. A. Cuculo, *Conversion of cellulose, chitin and chitosan to filaments with simple salt solutions*, In *Biodegradable and Sustainable Fibers*, R.S. Blackburn, Ed. Woodhead Publishing, London, 2005.
1. C.Jordan, B. Crawford and M. Frey*, “Investigation of Textile Finishing – A scientific discovery experiment for children of all ages” *Journal of Textiles and Apparel, Technology and Management*, **4**(3) (online journal) http://www.tx.ncsu.edu/jtatm/volume4issue3/tex_finishing.htm, 2005.

Courses Taught:

- FSAD 1350: Fibers, Fabrics and Finishes
- FSAD 1360: Fibers, Fabrics and Finishes Laboratory
- FSAD 2370: Structural Fabric Design
- FSAD 6390: Mechanics of Fibrous Structures
- FSAD 6660: Fiber Formation Theory and Practice