

Curriculum Vitae

Lara A. Estroff

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Date of Birth: July 1, 1975 (Brunswick, ME)

Education

B.A., Chemistry, 1997, Swarthmore College, Swarthmore, PA.
Ph.D., Chemistry, 2003, Yale University, New Haven, CT.

Professional Experience

Aug. 2005 – **Assistant Professor** of Materials Science and Engineering, Cornell University.
2003 – 2005 **NIH-funded Post-doctoral Researcher**, Harvard University.
1997 – 1998 **Visiting Researcher**, Weizmann Institute of Science, Rehovot, Israel.

Areas of Primary Scientific Interest

Biom mineralization and bio-inspired materials synthesis: hydrogels and self-assembled monolayers, diffusion and crystal growth, crystal nucleation, polymorphism of organic compounds.

Honors and Organizations

Ruth L. Kirschstein National Research Service Award (NIH Post-Doctoral Fellowship), 2003-2005
Materials Research Society Graduate Student Silver Award, 2002
American Chemical Society Division of Organic Chemistry Graduate Fellowship, 2000-2001
Member of Sigma Xi, Phi Beta Kappa, American Chemical Society, and Materials Research Society

Professional Activities

- Discussion Leader at the Thin Film and Crystal Growth Mechanisms Gordon Conference for the session, "Biological Control of Crystallization", South Hadley, MA, June 2005.

Peer-Reviewed Publications (reviews are marked with "#")

- 1) Paley, R. S.*; deDios, A.; **Estroff, L. A.**; Lafontaine, J. A.; Montero, C.; McCulley, D. J.; Rubio, M. B.; Ventura, M. P.; Weers, H. L.; delaPradilla, R. F.; Castro, S.; Dorado, R.; Morente, M. "Synthesis and diastereoselective complexation of enantiopure sulfinyl dienes: The preparation of sulfinyl iron(0) dienes" *J. Org. Chem.* **1997**, 62, 6326-6343.
- 2) Paley, R. S.; **Estroff, L. A.**; McCulley, D. J.; Martinez-Cruz, L. A.; Sanchez, A. J.; Cano, F. H. "Diastereoselective allylations of enantiopure 3- and 4- substituted η^4 -(1Z)-(sulfinyldienal)iron(0) tricarbonyl complexes" *Organometallics* **1998**, 17, 1841-1849.
- 3) Albert, R. M.; Lavi, O.; **Estroff, L.**; Weiner, S.; Tsatskin, A.; Ronen, A.; Lev-Yadun, S. "Mode of occupation of Tabun Cave, Mt Carmel, Israel during the Mousterian Period: A study of the sediments and phytoliths" *J. Archaeol. Sci.* **1999**, 26, 1249-1260.
- 4) Paley, R. S.; **Estroff, L. A.**; Gauguier, J. M.; Hunt, D. K.; Newlin, R. C. "Enantiopure η^4 -(1-sulfinyldiene)iron(0) tricarbonyl complexes as templates for carbocycle construction via ring-closing metathesis" *Org. Lett.* **2000**, 2, 365-368.
- 5) **Estroff, L. A.**; Hamilton, A. D. "Effective gelation of water using a series of bis-urea dicarboxylic acids" *Angew. Chem. Int. Ed. Engl.* **2000**, 39, 3447-3450.

- 6) # **Estroff, L. A.**; Hamilton, A. D. "At the interface of organic and inorganic chemistry: Bio-inspired synthesis of composite materials" *Chem. Mater.* **2001**, *13*, 3227-3235.
- 7) **Estroff, L.A.**; Leiserowitz, L.; Addadi, L.; Weiner, S.; and Hamilton, A.D. "Characterization of an Organic Hydrogel: A Cryo-TEM and X-ray Diffraction Study" *Adv. Mater.* **2003**, *15*, 38-42.
- 8) **Estroff, L.A.**; Huang, J.S.; Hamilton, A.D. "Fiber Formation in Water by a Mono-Urea Dicarboxylic Acid" *Chem. Commun.* **2003**, 2958-2959.
- 9) **Estroff, L.A.**; Incarvito, C.D.; Hamilton, A.D. "Design of a Synthetic Foldamer that Modifies the Growth of Calcite Crystals" *J. Am. Chem. Soc.* **2004**, *126*, 2-3.
- 10) **Estroff, L.A.**; Addadi, L.; Weiner, S.; Hamilton, A.D. "An Organic Hydrogel for the Growth of Calcium Carbonate" *Org. & Biomol. Chem.* **2004**, 137-141.
- 11) # **Estroff, L.A.**; Hamilton, A.D. "Water Gelation by Small Organic Molecules" *Chem. Rev.*, **2004**, *104*, 1201-1218.
- 12) # Love, J.C.; **Estroff, L.A.**; Kriebel, J.K.; Nuzzo, R.G.; Whitesides, G.M. "Self-Assembled Monolayers of Thiolates on Metals as a Form of Nanotechnology" *Chem. Rev.*, **2005**, *105*, 1103-1170.
- 13) Krishnamurthy, V.M.; Quinton, L.J.; **Estroff, L.A.**; Metallo, S.J.; Isaacs, J.M.; Mizgerd, J.P.; Whitesides, G.M. "A Bifunctional Polymer Promotes the Opsonization by Antibodies and Phagocytosis of Gram-Positive Bacteria" *Biomaterials.*, in press, **2006**

Non-Peer Reviewed Publications

- 1) **Estroff, L.A.**; Hamilton, A.D. "Cryo-TEM, X-Ray Diffraction and Modeling of an Organic Hydrogel" in *Molecular Gels: Materials with Self-Assembled Fibrillar Networks*; Terech, P. and Weiss, R.G., Eds.; **2005**, Springer: Dordrecht, The Netherlands.
- 2) Krishnamurthy, V.M.; **Estroff, L.A.**; Whitesides, G.M. "Multivalency in Ligand Design" to be published in *Fragment-Based Approaches in Drug Discovery*; Jahnke, W and Erlanson, D, Eds; Wiley-VCH.

Patents

- 1) Krishnamurthy, V.M.; Quinton, L.J.; **Estroff, L.A.**; Metallo, S.J.; Mizgerd, J.P.; Whitesides, G.M. "A Bifunctional Polymer Promotes the Opsonization by Antibodies and Phagocytosis of Gram-Positive Bacteria" U.S. Provisional Patent Application No. 60/704,715, August 2, 2005.

Synergistic Activities:

- Research mentor at Cornell of 1 postdoc, 3 graduate students, 1 MEng student, 2 undergraduate researchers.
- Project supervisor of 1 REU student at Harvard University and 2 undergraduate researchers at Yale University.

Ph.D. Students and Postdocs

Current: Ellen Keene, Hanying Li, Jason Dorvee (graduate students); Dat Tran (postdoc).

Advisors

Robert S. Paley (undergraduate thesis), Swarthmore College.

Andrew D. Hamilton (graduate thesis), Yale University

Steve Weiner and Lia Addadi (visiting researcher), Weizmann Institute of Science, Rehovot, Israel.

George M. Whitesides (post-doctoral research fellow), Harvard University