Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Experimental and Numerical Study of the Role of Disorder on Contact Angle Hysteresis[1] ANGELINA N. SAMS, VICTORIA E. MERTEN, MICHAEL S. PETTERSEN, Washington and Jefferson College — Hysteretic behavior of the contact angle of a liquid on a solid is often ascribed to topographic or chemical heterogeneity of the surface. Recent experiments by Rolley and Guthmann[2] on liquid hydrogen on cesium suggest that both the hysteresis and the contact line dynamics might be explained in terms of the mesoscale structure of the cesium surface. We have investigated a room temperature system with similar wetting and structural properties, tetradecane on dodecanethiol-treated evaporated gold films, and compare the results with a model of the expected hysteresis due to the topographical heterogeneity as measured by AFM, and reported disorder in the thiol film.[3]

[1]Supported by NSF grant 0959373 and the Washington and Jefferson DIDF fund
[2]E. Rolley and C. Guthmann, *Phys. Rev. Lett.* **98**, 166105 (2007).
[3]E. Delamarche, B. Michel, H. Kang and C.Gerber, *Langmuir* **10**, 4103 (1994).

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Date submitted: 14 Nov 2011 Electronic form version 1.4