Sally Dym Solomon

Professor of Chemistry

Tel: 215-895-2642 Fax 215-895-1265

e-mail: sallys@drexel.edu

BS. 1963 Drexel University Ph.D. 1966 University of Pennsylvania

Science in Motion, SIM

(http://www.philasim.org/)

SIM has been delivering scientific instruments to schools and providing support to local teachers since 2000.

Students at West Philadelphia High School are measuring the density of liquids in the photograph below

In a letter received 9.24.07, a science teacher at the Parkway School expressed gratitude for SIM with "special thanks to the mobile educator, Charlie Boritz". She went on to say

" I am able to give my students the formal laboratory experience and exposure they need to enter college…experiences [that] would not have been available to our students due to our limited budget"

New materials are constantly being designed for SIM such as ice-cooled condensers that permit distillations without running water, "Using an Ice-Cooled Condenser" S. Solomon* , S. Rutkowsky, B. Brook, and J. Bennet, *J. Chem. Educ* .p 299, 2003. A new traveling demonstration show is also available upon request, "Chemical Demonstration Show", Vol. 11, No. 1, 2006 *The Chemical Educator,* S. D. Solomon* and S. A. Rutkowsky

Funding for Science in Motion 2006-07

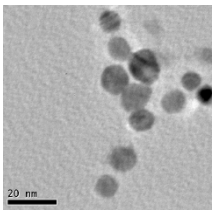
Commonwealth of PA $162,500

Mark Matsen $3000. and

Honda $50,000 pending

Synthesis of Noble Metal Nanoparticles

Synthesis of Ag, Au and Cu nanoparticles (NPs) is an outgrowth of a University of Pennsylvania/Drexel NSF grant (2002-2005) that sought to introduce nanotechnology to community colleges (S. Solomon CoPI). My group has published a method for synthesis of 10-12 nm Ag NP's, "Synthesis and Study of Ag NPs" S. Solomon*, Bahadory, M. Jeyarajasingam, A.V.; Rutkowsky, S. A.; Boritz, C; Mulfinger, L., *J. Chem. Educ.* **2007** *84* 322. The TEM image is shown below (20 nm size bar) as well as sols in various states of aggregation (none in the leftmost clear yellow sample to complete on the right)



Mozghan Bahadory is currently working on the preparation of stable Cu NP's, the topic of a large portion of her Ph.D. thesis. We have also begun collaboration with professors in the college of engineering, in particular Dr. MinJun Kim in mechanical engineering. His proposal with Mira Olsen and Sally Solomon as Co-PI's, entitled "Ultra-Fast Detection and Configuration of Pathogenic Single Cells and Engineered Nanoparticles in Solutions" has recently been submitted to NSF. $235,692 Pending