Esther Winter Gomez

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EDUCATION

2008-present	*Princeton University, Princeton, New Jersey* Postdoctoral Research Fellow, Departments of Chemical Engineering and Molecular Biology Advisor: Professor Celeste M. Nelson
2002-2007	*University of California, Berkeley, California* Ph.D. Chemical Engineering, December 2007 Dissertation Title: Investigating Membrane Surface Interactions with Two-Dimensional Dispersions of Lipid-Coated Particles Advisor: Professor Jay T. Groves
1997-2002	*University of Florida, Gainesville, Florida* B.S. Chemical Engineering, with honors Minor in Chemistry

EXPERIENCE

2008-present	Postdoctoral research focusing on the effect of matrix compliance and mechanical tension on mammary gland development and pathology.
2002-2007	Graduate research focusing on colloid and surface science, interactions on lipid membrane surfaces, and biosensor development.
Spring 2005 and Spring 2006	Teaching assistant for undergraduate *Transport Processes* course. Responsible for assignment development, leading recitation sessions, grading, and holding office hours.
Fall 2003	Teaching assistant for graduate *Thermodynamics and Statistical Mechanics* course. Responsible for assignment development, grading, and holding office hours.
2001-2002	University of Florida undergraduate research assistant in Chemical Engineering under the guidance of Professor Anuj Chauhan. Investigated the use of contact lenses for ophthalmic drug delivery.

HONORS AND POSITIONS

	Chair, 2010 Gordon-Kenan Graduate Research Seminar: Bioanalytical Sensors
2009	Susan G. Komen for the Cure Postdoctoral Fellowship
2009	New Jersey Commission on Cancer Research Postdoctoral Fellowship
2008	Vice-Chair, 2008 Gordon-Kenan Graduate Research Seminar: Bioanalytical Sensors
2007	University of California Graduate Division Travel Grant
2006	Poster prize at Gordon-Kenan Graduate Research Seminar: Bioanalytical Sensors
2006	Department of Chemical Engineering Travel Award
2005	Dow Outstanding Teaching Award
2000-2002	Engineering Research Center Undergraduate Research Scholarship
2000-2001	College of Engineering Dean's Scholarship
1999	University of Florida Anderson Scholar of Highest Distinction
1998	Wentworth Scholarship
1997-1998	Robert D. and Flora E. Furhman Scholarship
1997	Central Florida MENSA Scholarship

PUBLICATIONS

3. "Lithographically-defined two- and three- dimensional tissue microarrays," Gomez, E.W.; Nelson, C.M. In *Biological Microarrays (Methods in Molecular Biology series)* (ed. Zourob, M.) (Humana Press, Totowa, NJ), *in press*, 2009.

2. "Like-charge interactions between colloidal particles are asymmetric with respect to sign," Gomez, E.W.; Clack, N.G.; Wu, H.J.; Groves, J.T. *Soft Matter* 2009, *5*, 1931-1936.

1. "Surface binding affinity measurements from order transitions of lipid membrane-coated colloidal particles," Winter, E.M.; Groves, J.T. *Anal. Chem.* 2006, *78*, 174-180.

PRESENTATIONS

14. "Regulation of epithelial-mesenchymal transition and fibrogenesis by mechanical signals from the microenvironment," Gomez, E.W.; Radisky, D.C.; Nelson, C.M. American Society for Cell Biology Annual Meeting, San Francisco, California, December 2008 [poster].

13. "Epithelial-mesenchymal transition is regulated by cell shape and matrix compliance," Gomez, E.W.; Radisky, D.C.; Nelson, C.M. American Institute of Chemical Engineers Annual Meeting, Philadelphia, Pennsylvania, November 2008 [poster].

12. "Epithelial-mesenchymal transition is regulated by cell shape and matrix compliance," Gomez, E.W.; Radisky, D.C.; Nelson, C.M. Biomedical Engineering Society Annual Meeting, St. Louis, Missouri, October 2008 [poster].

11. "Like-charge interactions between membrane-coated particles," Gomez, E.W.; Clack, N.G.; Groves, J.T. American Institute of Chemical Engineers Annual Meeting, Salt Lake City, Utah, November 2007 [oral].

10. "Like-charge interactions in membrane-derivatized colloidal monolayers," Winter, E.M.; Clack, N.G.; Groves, J.T. Materials Research Society Spring Meeting, San Francisco, California, April 2007 [poster].

9. "Anomalous attractions of membrane-coated colloidal particles," Winter, E.M.; Clack, N.G.; Groves, J.T. American Chemical Society Annual Meeting, San Francisco, California, September 2006 [oral].

8. "Membrane-coated colloids as bioanalytical sensors," Winter, E.M.; Clack, N.G.; Baksh, M.M.; Groves, J.T. Bioanalytical Sensors Gordon Research Conference, Ventura, California, February 2006 [poster].

7. "Membrane-coated colloids as bioanalytical sensors," Winter, E.M.; Clack, N.G.; Baksh, M.M.; Groves, J.T. Gordon-Kenan Graduate Research Seminar: Bioanalytical Sensors, Ventura, California, February 2006 [invited seminar].

6. "Membrane-coated colloids as bioanalytical sensors," Winter, E.M.; Clack, N.G.; Baksh, M.M.; Groves, J.T. Gordon-Kenan Graduate Research Seminar: Bioanalytical Sensors, Ventura, California, February 2006 [poster].

5. "Colloids as tools for probing the cell surface," Winter, E.M.; Clack, N.G.; Wise, A.; Baksh, M.M.; Groves, J.T. QB3 Biomembranes Symposium, San Francisco, California, May 2005 [poster].

4. "Bioanalytical detection on membrane surfaces with colloidal dispersions," Winter, E.M.; Groves, J.T. Biophysical Society Annual Meeting, Long Beach, California, February 2005 [poster].

3. "A label-free colloidal assay for membrane binding affinity," Winter, E.M.; Baksh, M.M.; Groves, J.T. Materials Research Society Spring Meeting, San Francisco, California, April 2004 [poster].

2. "Membrane-derivatized colloids: A label-free assay for membrane binding affinity," Winter, E.M.; Baksh, M.M.; Groves, J.T. Biophysical Society Annual Meeting, Baltimore, Maryland, February 2004 [poster].

1. "Phase transitions and molecular detection in a lipid membrane derivatized colloid," Winter, E.M.; Baksh, M.M.; Jaros, M.; Groves, J.T. Center on Polymer Interfaces and Macromolecular Assemblies Technical Forum, San Jose, California, August 2003 [poster].

SERVICE

2006-2007	Community in the Classroom Volunteer Developed and taught science lessons to K-5 level classes in the local community.
2004-2005	Synopsys Science and Technology Outreach Foundation Volunteer Served as judge for local 6-12 level science fairs.