

My research focuses on the influences of culture topography and autocrine growth factors in relation to embryo growth. The hypothesis is that glycoproteins and triterpenes bind and sequester embryo-secreted growth factors and, dependent on topographic interactions, influence embryo growth. I anticipate that embryos with greater environmental surface interactions, and thus greater contact with glycoproteins and triterpenes, will display increased growth.

This hypothesis is being studied using three different culture environments: a flat surface, an inverted cone, and embryo encapsulation. The chemical environment is also being examined through the use of hyaluronic acid and PMEDSAH coatings. Embryos will be cultured in these environments and standard embryo growth parameters examined. Using an Amplex Red Assay, developed at the University of Michigan, glucose consumption and lactate production will also be determined.

Peer-reviewed Manuscripts

- 2007** **Stanek M.B.**, Borman, S.M., Molskness, T.A., Larson, J.M., Stouffer, R.L., Patton, P.E. Differential regulation of vascular endothelial growth factor (VEGF-A) secretion by insulin and insulin-like growth factors (IGF) in human luteinizing granulosa cells (LGC) following controlled ovarian stimulation (COS) in a polycystic ovarian (PCOS) population. *Journal of Clinical Endocrinology and Metabolism* 2007; 92: 2726 – 2733.
- 2008** **Oakes, M.B.**, Eyvazzadeh, A.D., Quint, E.H., Smith, Y.R. Complete Androgen Insensitivity: A Review. *Journal of Pediatric and Adolescent Gynecology*. In press.

Manuscripts submitted for Publication

- 2008** **Oakes, M.B.**, Quint, E, Smith, Y.R., Cederna, P.S. Staged breast reconstruction in young women with severe asymmetry. Manuscript submitted.

Manuscripts in Progress

- 2008** **Oakes, M.B.**, Gomes, C.M., Fioravanti, J., Serafini, P., Motta, E., Smith, G.D. A case of oocyte and embryo vitrification resulting in clinical pregnancy. Manuscript submitted for review.
- 2008** **Oakes, M.B.**, Beck, S., Smith, Y.R., Quint, E.H., Park, J.M. A novel case of treatment of a neovagina stricture using a buccal mucosa graft. Manuscript in progress.

Oral Presentations

2007 **Oakes, M.B.**, Quint, E.H., Hussain, H., Smith, Y.R. A rare case of a double resorption defect. Abstract accepted ASRM, October 2007/

2008 Beck, S., **Oakes, M.B.**, Smith, Y.R., Quint, E.H., Park, J.M. A novel case of treatment of a neovagina stricture using a buccal mucosa graft. Abstract accepted NASPAG, April 2008.

Poster Presentations

2007 **Oakes, M.B.**, Gomes, C.M., Fioravanti, J., Smith, G.D. A case of oocyte and embryo vitrification resulting in clinical pregnancy. Abstract accepted Anita Payne Research Day, University of Michigan, 2007.

2007 **Stanek, M.B.**, Quint, E, Smith, Y.R., Cederna, P.S. Breast reconstruction utilizing tissue expanders and implants in girls with hypoplastic or asymmetrical breast development. Abstract accepted NASPAG, April 2007 and ACOG, Michigan section May, 2007.

2005 **Stanek, M.B.**, S. Mongoue-Tchokote, R.L. Stouffer, T.A. Molskness, D.E. Battaglia, P.E. Patton. Differential regulation of vascular endothelial growth factor (VEGF-A) secretion by insulin and insulin-like growth factors (IGF) in human luteinizing granulosa cells (LGC) following controlled ovarian stimulation (COS) in a polycystic ovarian (PCOS) population. Abstract accepted ASRM, October 2005.