

Name: Jessica Vazquez

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Major Professor: Aleksandar Stanic

Degree Objective: Ph.D. Endocrinology and Reproductive Physiology

Background: BS Biology, California State University-Long Beach

Current Research Project:

Preeclampsia and intrauterine growth restriction (IUGR), leading causes of maternal/fetal morbidity and mortality, result from disordered formation and function of the placenta. Decidual natural killer (dNK) cells have been shown to be actively involved in the guidance of invading trophoblasts during the early stages of placentation, and produce angiogenic factors implicated in buildup of a dense capillary network. T-regulatory and dendritic cells (DCs) also play critical immunomodulatory roles at the maternal-fetal interface, essential for fetal survival. The recent discovery of innate lymphoid cells (ILCs), lymphocytes lacking antigen-specific receptors, has led to a paradigm shift in our understanding of innate immunity. Three types of ILCs have been classified based on their cytokine profiles and transcription factors needed for their development: type 1 ILCs, including NK cells, type 2 ILCs, and type 3 ILCs, including Lti-like cells. Since type 3 ILCs are required for architectural formation of lymph nodes, we hypothesize that local ILC3s are pivotal in decidual remodeling and that this function is regulated by DCs through cell-cell crosstalk. Interestingly, studies have shown that there is reciprocal regulation between DCs and ILC3s in other tissues, such as the gut. Furthermore, studies have shown that decidual stromal cells (DSCs) play an important immune modulatory role at the maternal-fetal interface. My project focuses on elucidating the role ILC3s, in concert with DCs and DSCs, play in the establishment of proper placentation.

Honors:

2016 UW Madison Graduate School Travel Award

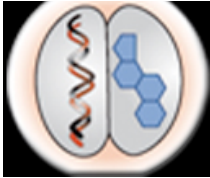
Grants Received:

NIH R25 Trainee; NIH Training and Education to Advance Minority Scholars in Science (TEAM-Science) NIH T25-GM083252 2015-2017.

UW-Madison Science and Medicine Graduate Research Scholars Fellowship 2017

National Presentations:

Oral:



Vazquez J, Li Y, Stanic AK. Unique Innate Lymphoid Cells Revealed by Machine Learning/Dimensionality Reduction in Human Decidua. To be presented in **oral** format at the Society for Reproductive 64th Annual Scientific Meeting Investigation. Orlando, Florida. **March 2017**

Poster:

Vazquez J, Li Y, Stanic, AK. (2016) Unbiased High-Dimensional Identification of Lymphocytes in Human Decidua. American Society for Reproductive Immunology 36th Annual Meeting. Baltimore, Maryland.

Li Y, **Vazquez J**, Stanic AK. (2016) Unbiased High-Dimensional Identification of Lymphocytes in Mouse Uterine. The American Association of Immunologist (AAI) Annual Meeting Investigation. Seattle, Washington.

Alvarez S, Bartlett J, Pollock N, **Vazquez J**, McCray P, Porter E. (2016) Challenge with *Staphylococcus aureus* induces a lipid response in newborn piglets. The American Association of Immunologist (AAI) Annual Meeting Investigation. Seattle, Washington.

Vazquez J, Li Y, Stanic, AK. (2016) Unbiased High-Dimensional Identification of Lymphocytes in Human Decidua. Society for Reproductive 63rd Annual Scientific Meeting Investigation. Montreal, Canada.

Other Presentations:

Poster:

Vazquez J, Li Y, Stanic, AK. (2016) Unbiased High-Dimensional Identification of Lymphocytes in Human Decidua. Endocrinology and Reproductive Physiology Program Symposium. Selected as **Finalist**.

Vazquez J, Li Y, Stanic, AK. (2015) High-Dimensional Flow Cytometry for the Investigation of Innate Immune Effector Cells in Human Decidua. UW Women's Health and Health Equity Research Lecture & Symposium 2015. Madison, WI.

Teaching and Mentorship:

06/2015-
Current Mentee: Melina Chavarria, undergraduate student. Project title "Identification and functional analysis of Mucosal Associated Invariant T (MAIT) cells at the Maternal-Fetal Interface."

Extent of training: basic research/laboratory methods and data documentation.

09/2016-
Current Mentee: Nathan Karst, undergraduate student. Project title "Decidual Stromal Cell-ILC3 Interplay at the Maternal-Fetal Interface."

Research presented at the Undergraduate Research Symposium, UW-Madison.



Extent of training: basic research/laboratory methods, data documentation, and abstract and poster presentation.

ERP Service:

ERP Recruitment Advisory Committee 2016