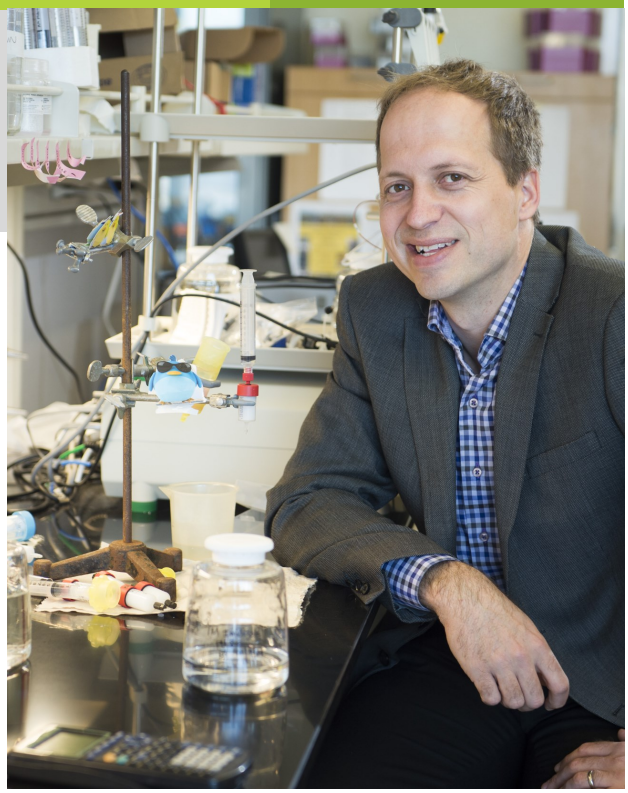
Department of Microbiology and Immunology Seminar

UNIVERSITY OF SASKATCHEWAN

Dr. Reuben S. Harris
Department of Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, Minnesota,



Recent studies have implicated the DNA cytosine deaminase APOBEC3B as a major source of mutation in breast and many other cancer types. APOBEC3B explains a large proportion of both dispersed and clustered cytosine mutations, the latter of which are also called kataegis. APOBEC3B expression levels correlate with poor outcomes for patients with estrogen receptor positive breast cancer. While targeted therapies, such as tamoxifen, are available to treat these tumors, secondary drug resistance often develops. Clinical data will be presented that strongly implicate APOBEC3B in tumor recurrence and resistance to tamoxifen therapy after surgical resection of primary tumors. APOBEC3B knockdown and overexpression experiments were done in a xenograft model for estrogen receptor positive breast cancer. The clinical and experimental results combine to demonstrate that APOBEC-3B drives resistance to endocrine treatment with tamoxifen. These results are likely to be broadly applicable to other cancer types and targeted therapies as APOBEC3B is a general source of mutagenic fuel for tumor evolution.

"Toward a Molecular and Clinical Understanding of APOBEC Mutagenesis in Cancer."

DATE: Thursday, January 21, 2016
TIME: 4:00 pm
PLACE: A226 Health Sciences