



# Genome Sciences Seminar

Wednesday, 2.5.20 | 3:30 | Foegen Auditorium

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## Dr. Hannes Rost

Assistant Professor  
University of Toronto

# “Developing the tools for the personalized medicine revolution: Using mass spectrometry for longitudinal molecular profiling”

We are working with next-generation mass spectrometric instruments to measure proteins and metabolites with unprecedented accuracy and throughput. The software developed in our lab is capable of analyzing millions of mass spectrometric scans, identify the measured analytes and extract accurate quantitative information from this data. We collaborate with researchers and doctors around the world using our tools and algorithms, helping them to interpret mass spectrometric data or develop new ways to answer long-standing biological questions.

The computational methods for quantitative mass spectrometry developed by us are then applied to answer questions in systems biology and personalized medicine. We are using targeted and untargeted mass spectrometry to measure proteins and metabolites with unprecedented accuracy and throughput, allowing researchers to obtain a systems-level view of analytes in mammalian cells, tissues and blood. One promising area of research has been the development of DIA methods in mass spectrometry with we are investing for their potential to increase specificity and throughput by orders of magnitude. These methods allow us to extract biological information from complex mass spectrometric datasets and apply this information to answer questions in systems biology and personalized medicine. We are currently applying our work to study global changes in humans during the progressions of diseases as diverse as diabetes, neurological diseases, connective tissue disorders and other disorders.

<http://www.roestlab.org/>

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Refreshments served outside the Auditorium at 3:20pm

Questions? Contact Brian Giebel at [bgiebel@uw.edu](mailto:bgiebel@uw.edu) or visit the Seminar website at <http://www.gs.washington.edu/news/seminars.htm>

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