



Big Data Training for Cancer Research

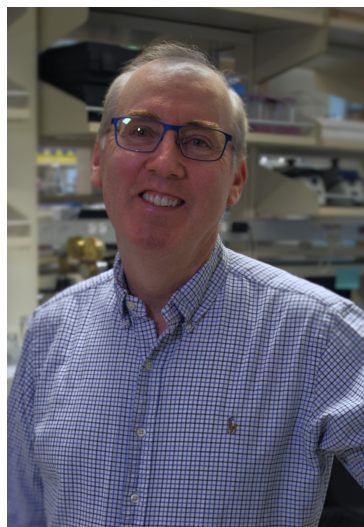
Special Lecture Series

Leveraging Advanced Metabolism Knowledge to Fight Cancer

Dr. Dan Raftery

July 10, 2025, 1:00 – 2:15 PM (PDT)

Sue Gross Auditorium, Susan & Henry Samueli College of Health Sciences



Speaker Bio: Dan Raftery is a Medical Education and Research Endowed Professor at the University of Washington, School of Medicine, and Professor at the Fred Hutchinson Cancer Center in Seattle, WA. He was previously Professor of Chemistry in the Analytical Division at Purdue University, where his group began its research in metabolomics in 2003. Dr. Raftery moved to the University of Washington in 2012, where he founded the Northwest Metabolomics Research Center.

Dr. Raftery's current research program is focused on the development of new analytical methods in metabolomics and their application to a range of clinical and basic science studies related to metabolic alterations. His group uses advanced mass spectrometry and NMR methods to identify early biomarkers and metabolic risk factors for numerous cancers and other diseases as well as aging, and to explore systems biology in cells and mitochondria.

Abstract: The advanced study of metabolism, or metabolomics, has developed into a highly sensitive approach to detect biological changes and stresses that result from many factors including diseases, aging and diet. We now have methods to detect more than 1000 small metabolic molecules, or metabolites, in a single drop of blood, which allows us to carefully monitor even small metabolic changes in cells, tissue and biofluids like blood and urine. It is now well known that cancer cells and tumors display altered metabolism, and this information can be put to good use. For example, using Artificial Intelligence methods, scientists in the field of metabolomics are developing new ways to detect cancers earlier and to identify altered metabolism that can lead to drug targets for improved therapies. In this talk I will describe the field of metabolomics and cancer's effect on metabolism, along with some recent successes and remaining challenges in the efforts to fight several cancers using metabolic approaches.
