

David Wishart - Biography

David Wishart is a Professor in the Departments of Biological Sciences and Computing Science at the University of Alberta. He currently holds the CIHR/Rx&D Bristol-Myers Squibb Chair in Protein Chemistry and is an adjunct professor with the Faculty of Pharmacy and Pharmaceutical Sciences. Dr. Wishart is also a senior research officer and the co-director of the Nanobiology program at the NRC's National Institute for Nanotechnology (NINT). After completing his BSc in Physics at the University of Alberta in 1984, Dr. Wishart obtained his Ph.D. in Molecular Biophysics & Biochemistry at Yale University in 1991. He was hired as an assistant professor at the University of Alberta in 1995 and was promoted to full professor in 2003. Over the past 15 years Dr. Wishart has published more than 100 scientific papers and presented more than 200 abstracts and invited lectures. Dr. Wishart has served as the chair or co-chair for nearly a dozen major conferences (ISMB, CPI, PSB) and has sat on numerous boards and executive committees for several local companies, associations, research institutes and academic bodies. He has co-founded two companies, BioTools Inc. and Chemomx Inc.

A major focus of Dr. Wishart's research over the past 3 years has been the determination of the Human Metabolome. This multi-university effort involves nearly 20 scientists who are working on experimental and computational approaches to identify and quantify all the detectable metabolites (both endogenous and exogenous) in the human body. To date, the group has identified or found evidence for more than 2400 endogenous compounds and is archiving this information on a freely accessible web-resource called the Human Metabolome Database (HMDB). In addition to this work on endogenous metabolites, the group has identified and catalogued nearly 1200 drugs (now archived in DrugBank) and is working to complete a similar database on food additives. The group is using advanced methods in NMR spectroscopy, mass spectrometry, multi-dimensional chromatography and machine learning to facilitate this work.