

metabolome project trumps genome

When doctors review blood test results, they see only a small part of the patient's overall health. But a University of Alberta-led research project has identified the ingredients in the recipe for humans, paving the way to faster, cheaper ways to detect disease.

The Human Metabolome Project was led by David Wishart, a professor in the Department of Computing Sciences, the Department of Biological Sciences, and a senior research officer with the National Institute for Nanotechnology. His team catalogued some 2,500 metabolites – chemicals found in or produced by the body – and twice as many substances stemming from drugs and food.

Detailed information about the metabolites is now available online through the Human Metabolome Database. "By decoding the human metabolome, we can identify and diagnose hundreds of diseases in a matter of seconds, at a cost of pennies," says Wishart.

"Most medical tests today are based on measuring metabolites in blood or urine. Unfortunately, less than one percent of known metabolites are being used in routine clinical testing. If you can only see one percent of what's going on in the body, you're obviously going to miss a lot."

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eyes on global warming

The world is at a crossroads, facing major challenges and opportunities related to the environment and energy. We struggle to balance our need for secure conventional energy with growing environmental concerns. Scientists strive to understand the workings of climate change in order to mitigate its impact.

These are global challenges.

Biological sciences professor David Hik leads Canada's participation in International Polar Year, a two-year international research project to study the Earth's polar regions involving sixty countries, some 50,000 scientists, more than 170 research projects, and about \$1.5 billion. He is among a cadre of top-notch scholars researching all aspects of polar regions and climate change.

Climate change is the most obvious challenge, says Hik. "IPY gives us an opportunity to talk about what is happening in the polar regions. The incremental warming we will see in the next decades will result in changes that affect everything – wildlife, oceans, vegetation, the people who live and work there, and the rest of the planet."

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