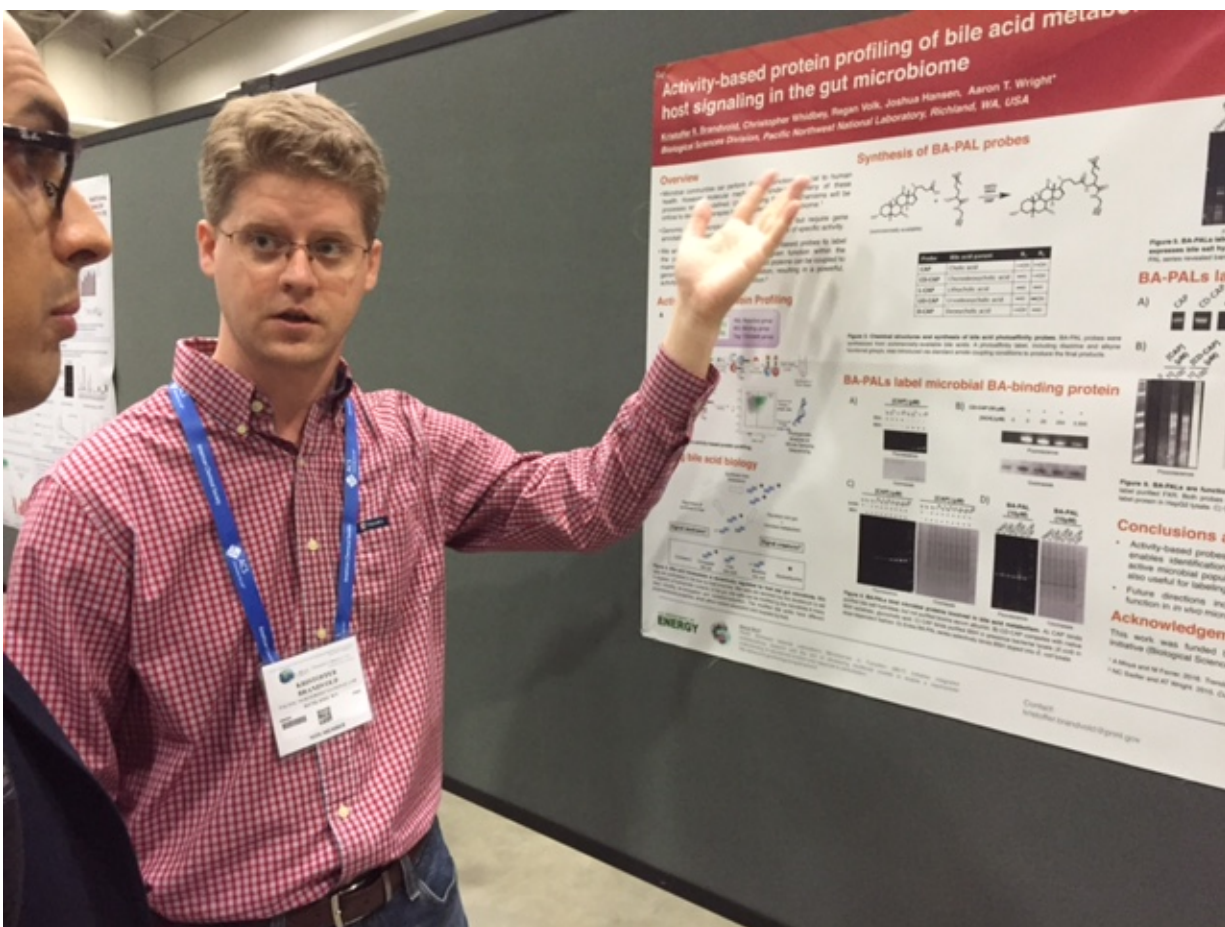


Profiling the gut microbiome proteins that modify bile

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Kris Brandvold presents his poster about bile and the microbiome at the ACS annual meeting. Credit: Pacific Northwest National Laboratory

It turns out that bile is a lot more dynamic than you might think. One of the biggest factors affecting bile, which is very important to our ability to absorb nutrients, is our diet. But another is the make-up of the community of microbes in the human gut.

Researcher Kris Brandvold of the Department of Energy's Pacific Northwest National Laboratory is hunting down the exact ways that microbes affect our bile and change its function in our body. Such changes are crucial to how we absorb nutrients, how we put on weight, and even how susceptible we are to develop certain types of cancer.

Brandvold is working with Aaron Wright and colleagues to use activity-based protein profiling approaches to measure the activity of proteins modifying bile in the [gut microbiome](#), then separate out proteins of interest and identify them. The system allows the team to gain a global view of molecular activity in a system by measuring the activity of several proteins of interest simultaneously.

"We're studying how microbes change the local environment in our gut. We're studying what the exact steps are and what enzymatic machinery is involved when [gut microbiota](#) chemically modify the bile acid pool," said Brandvold.

"We need to know what microbes are affecting the molecular signals in bile, which molecules are receiving the signals, and what the signals mean," said Brandvold as he presented his work last week at the annual fall meeting of the American Chemical Society in Washington, D.C.

Provided by Pacific Northwest National Laboratory

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