Scientist **Dr. Benjamin Haibe-Kains** sees major potential in what technology can do for cancer patients in the years ahead.

In his lab at the Princess Margaret Cancer Research Tower, Dr. Haibe-Kains works with a diverse group of computer scientists, engineers, mathematicians, and statisticians.

Together, they are using their collective skills to comb through massive amounts of molecular data in an effort to predict the best therapies and drug combinations for cancer patients.

“This is a complex problem that requires multidisciplinary and complementary expertise,” says Dr. Haibe-Kains.

It’s also a problem that requires the use of artificial intelligence and machine learning because of the scale of the data that is involved.

“Humans are not equipped to crack large volumes of complex data,” says Dr. Haibe-Kains. “You need powerful computers to see what the genes are, the patterns that are important, and how you combine all those complex patterns to do what you want to do, which is design new therapies for patients.”

Eventually, Dr. Haibe-Kains believes it will be possible to identify drugs that help fight cancer, while also boosting the performance of accompanying medications, giving patients a better result.

It’s not an easy task and it’s something that can’t be done without the use of technology.

“Finding the best treatment is already hard. Finding the best combination of treatments is exponentially harder,” Dr. Haibe-Kains says.

“And that’s why we need computers: To find the answers so we can define treatments for each patient.”