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KNOCK OUT BREAST CANCER

IMPACT REPORT

Prepared for
Fondation Yvon Michel

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Fondation
du Centre universitaire
de santé McGill



McGill University
Health Centre
Foundation

CHAMPIONING BREAST CANCER RESEARCH

Since 2019, Fondation Yvon Michel has donated a generous \$117,800 to support the work of Dr. Peter Metrakos and Dr. Anthoula Lazaris, who are researching better treatments for metastatic breast cancer.

We are grateful to you for recognizing the McGill University Health Centre's expertise and potential in this area and for your enthusiastic and tireless fundraising to bring us one step closer to better treatments for metastatic breast cancer. It is our sincere hope that, through your support, we will ensure that fewer people lose their mothers, daughters, sisters and friends to this terrible disease.

In this report, you will find an update on the Metrakos Lab and the impact of your gifts.

IMPACT

A COUNTERPUNCH AGAINST METASTATIC BREAST CANCER

No woman wants to hear she has metastatic breast cancer. This insidious disease occurs when breast cancer spreads to other parts of the body, making it difficult to treat. **At the MUHC, Dr. Peter Metrakos, Dr. Anthoula Lazaris and their team made a discovery that could change everything.** Metastatic breast cancer has always been presumed to produce its own blood vessels to acquire the nutrients it needs to grow. This process is called *angiogenesis*, and, until recently, treatments for breast cancer were created with the goal of halting angiogenesis, and thus cutting off the cancer's blood supply. Recently, the Metrakos Lab discovered that some metastatic breast cancers do not use angiogenesis to grow (called *non-angiogenic* tumours.) Rather, they take over existing blood vessels to obtain oxygen and nutrients. This revelation completely changed how physicians and scientists have thought about metastatic breast cancer for years. **Now, thanks to your support, Dr. Metrakos, Dr. Lazaris and their team are developing new ways to knock out this deadly disease.**

RESEARCH TO KO BREAST CANCER

Your support has allowed the research team to pursue two avenues in the fight against metastatic breast cancer. The first is to understand everything they can about this cancer. There are several different types of breast cancer, so by analyzing everything from its genetics to the kinds of molecules it releases into the blood stream, the team can find each cancer's "signature." This is done through a process called *liquid biopsy*, which uses blood or other bodily fluids to identify cancer types. This knowledge is important because it allows them to identify exactly what type of cancer each patient has, and select treatments that will be most effective for the particular case.

The second avenue uses a research tool called *patient derived xenografts* (PDX) to study living tumours. This enables the researchers to study the growth of the tumour, understand how the immune system responds to it, and allows them to test different drugs to understand which treatments work best on each particular type of cancer. The Metrakos Lab is currently developing these PDX models to undertake pre-clinical trials—the last step before human trials—of a new therapy they have developed. The treatment works by knocking out the part of the tumour that allows it to grow. Preliminary results show that this technique causes the tumour to change from non-angiogenic to angiogenic (which in turn allows oncologists to treat it with existing drugs) or stops it from growing altogether. The team is now working to replicate this promising result, with the hope of developing a therapy that will either destroy or shrink tumours, allowing them to be removed surgically.

DR. THOMAS MAYER: YOUR PRIZEFIGHTER

Your support allowed the Metrakos Lab to hire post-doctoral fellow Dr. Thomas Mayer. Dr. Mayer holds a PhD in immunology from Université de Sherbrooke, and is working with Dr. Metrakos and Dr. Lazaris to better understand metastatic breast cancer and find ways to fight it. In particular, he is comparing the immune cells the body deploys to fight metastatic breast cancer versus metastatic liver cancer to better understand how the body naturally fights breast cancer.

A RINGSIDE VIEW

The Metrakos Lab was pleased to host you in November 2019 to tour the laboratory, get to know the researchers behind this important work and learn how they are combatting breast cancer.



THANK YOU

Dr. Metrakos, Dr. Lazaris, Dr. Mayer and the entire Metrakos Lab thank you for your generosity and your passion for helping others overcome metastatic breast cancer. It is a disease that no one should have to live with, and our researchers are working hard to ensure more people survive. Our patients, and patients across Canada, will benefit from the work you have supported, which has the potential to create new, personalized and more effective cancer treatments.

With your support, we are working hard to find better treatments, give better care, and knock out metastatic breast cancer.

Thank you.