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Maureen Shul, executive director of Wings of Hope for Pancreatic Cancer, and researchers from the University of Colorado Cancer Center are available for interviews. Additionally, the following story may be published in full or in part. Photo is attached.

Photo cutline:

From left, Pancreatic cancer survivor Jim Comerford, former Centennial Mayor Cathy Noon, a pancreatic cancer survivor, Todd Pitts, Ph.D., director of the GI Translational Research Lab at the University of Colorado Anschutz Medical Campus, Wings of Hope founder Maureen Shul and Sana Karam, M.D., Ph.D., an associate professor of radiation oncology at the Anschutz Medical Campus.

2022 Wings of Hope for Pancreatic Cancer Research grants are already at work

Research includes artificial intelligence and new bodily routes to fighting drug resistance

By Peter Jones

More than \$235,000 in locally raised grant funds were awarded last year by Wings of Hope for Pancreatic Cancer Research to support everything from developing new and unique drug therapies to using artificial intelligence to more precisely treat one of the most challenging of cancers.

All four of the 2022 grants—awarded during the 10th anniversary year for Wings of Hope—are supporting the multi-faceted and groundbreaking work taking place at the University of Colorado Cancer Center on the Anschutz Medical Campus in Aurora.

“The 2022 grants awarded are some of the most exciting ones to date in terms of their potential to translate into more effective patient outcomes and treatments,” said Maureen Shul, Wings of Hope’s founder and executive director. “We have every reason to believe these research projects being funded today will translate into more positive patient outcomes in the near future.”

The largest grant, \$109,000, is funding research into a new immunotherapy regimen that has been designed to perform the difficult task of activating cancer-fighting cells while simultaneously allowing the deceptively similar “enemy” cancer cells to die off naturally.

“Most of the therapies we have on the market activate the good cells, but what they do is activate any cell [with a particular genetic tag]. This one only activates the good cells. It hijacks the main food product for the bad cells,” explained Dr. Sana Karam, the radiation oncologist leading the study.

Karam’s team, including Drs. Angelo D’Alessandro and Ross Kedl, is using the regimen—in concert with traditional radiation therapies—on both mice and human cells. The lead researcher is

optimistic about a treatment that she says may finally send those frustratingly resistant pancreatic cancer cells running for the proverbial hills.

“Think of it as little good cells hunting, like a police force, going around the bloodstream,” Karam said. “If there’s a bad cell that happens to escape and comes back again, there’s a memory cell that has formed and can remember that cancer and can go kill it.”

The second-largest Wings of Hope grant, nearly \$80,000, will target what is called the CD93 pathway to the pancreas. The troublesome CD93 protein is no friend to the cancer-fighting agents that try to make their way through the human body, according to Dr. Yuwen Zhu, the surgical oncologist who is leading the research with assistance from Karam.

“By blocking the pathway, we can improve the immunotherapy and the chemotherapy. The pathways are used by the cancer cells to evade the therapy,” Zhu explained.

This initial research to set up a kind of biological roadblock is using mice in the initial stages and is focusing first on melanoma of the skin before moving onto the more challenging pancreas.

“There’s always a problem in terms of penetration of the drug to the pancreas, which is a hurdle for drug delivery and immunotherapy,” Zhu said. “This pathway could be important.”

A third grant for \$25,000 will help fund research into battling another difficult protein, CHD1L, which has been known to cause drug resistance in a large percentage of pancreatic cancer patients. With financial support from the CU Cancer Center, Dr. Daniel LaBarbera, co-director of the Anschutz Campus’s Center for Drug Discovery, has developed OTI-611, which has already shown promise for inhibiting the protein in research outside the human body.

“If successful, this could lead to a new clinical therapeutic regimen or a therapeutic strategy for pancreatic cancer patients to improve the mortality rates and to not only treat the tumors into recession but also help prevent them,” said LaBarbera, who is working alongside Dr. Natalie Serkova.

By binding to the troubling protein, the drug would potentially inhibit the effects of CHD1L, easing the transmission of radiation and chemotherapy, effectively sensitizing the pancreas to those life-saving treatments. So far, the studies in mice have been promising.

“We don’t see significant toxicity in their major organs, including the liver, the heart and the bone marrow, and we’ve seen a survival rate of 30 days—we would expect that to transfer to years in humans,” LaBarbera said of his anti-tumor agent, which he hopes to test for safety in humans within a couple years.

The final grant, also for \$25,000, is looking into how the burgeoning technology of artificial intelligence might be used to improve patient outcomes. This decidedly 21st century research is using AI to create “digital twins” of real pancreatic cancer patients. The idea is to see if past patients’ treatments might have been improved with the now-available precision offered by AI when targeting the often evasive pancreas.

“We’re using artificial intelligence to fill in the gaps, to hopefully tell us how we can predict on any given day exactly where a patient’s pancreas is going to lie,” said Dr. David Thomas, a physicist specializing in medical imaging. “The pancreas sits around a lot of squishy organs that are very sensitive to radiation, and we can do a lot of harm if we miss the pancreas.”

AI technology has already been used in the treatment of lung cancer and even for COVID-19.

“The results we’ve seen so far are very promising,” said Thomas, who is working with Dr. Danna Gurari, a computer scientist specializing in visual data.

Funding for all four grants came from the annual Wings of Hope benefit and through partnerships with the Kingsbury Open and Shane Lee Memorial golf tournaments.

This year's Evening of Hope, featuring singer Hazel Miller, will take place Sept. 8.

Wings of Hope for Pancreatic Cancer was founded in 2012 by Maureen Shul as a way to find purpose and give meaning to her own grief after losing her mother and brother to the disease within months of one another.

"I had no preconceived notion 10 years ago what Wings of Hope would accomplish," she said. "Thanks to the tremendous generosity of so many, we have been able to annually award grants for cutting-edge and novel pancreatic cancer research projects at the University of Colorado Cancer Center."

For more information, visit wingsofhopepcr.org.