Firsthand Account: “Science Keeps Me Going”

A Distinguished Professor Emeritus of Comparative Literature, Film Studies, and Italian does not cross one’s path every day. Huntsman Cancer Institute (HCI) patient Peter Bondanella holds that distinction. His credits include a list of about three dozen published original books and translations from the Italian and many illustrious awards and nominations.

When he and his wife, Julia, retired from Indiana State University, they wanted to resettle in an affordable place with a pleasant climate. “I wanted to be someplace without the things I hated about the weather in Indiana—too cold and too humid,” Peter says. The Bondanellas were introduced to St. George through a family connection, and they now live there.

Late in 2015, his doctor found a cyst on one of Peter’s kidneys in an ultrasound image and encouraged him to wait six months for another ultrasound. Simple kidney cysts often don’t cause problems, and the watch-and-wait approach helps avoid unnecessary treatment. Peter wasn’t comfortable with watch-and-wait. “I said ‘I want a CT scan or an MRI or both—yesterday,’” he says. “I’d be dead now for sure if I hadn’t insisted.” As a result of those tests, Peter was diagnosed with pancreatic cancer in January 2016.

Peter’s brother-in-law and sister-in-law are cancer researchers at Stowers Cancer Institute at the University of Kansas, also a National Cancer Institute-designated Cancer Center, which puts it in the same circle of excellence as HCI. “When I got my diagnosis, my
sister-in-law called the National Institutes of Health and talked to the head of oncological surgery—one of the guys who helps decide who gets to be an NCI–designated Cancer Center,” says Peter. “He told her that if he had relatives with cancer living in St. George, he would send them to HCI.”

So Peter came to HCI for treatment from the beginning. “Not that I didn’t think I could get good treatment in St. George,” he says. “But I couldn’t get clinical trials there.”

He is now in a trial pairing a new drug that works through the immune system with a chemotherapy combination approved for treating pancreatic cancer. “The immunotherapy drug unplugs an enzyme that the tumor makes to keep it hidden from my immune system,” he says.

“In preliminary studies, adding this immunotherapy raised the number of patients whose tumors shrunk from 23% to 38%,” says Ignacio Garrido-Laguna, MD, the HCI medical oncologist on Peter’s cancer care team. “Patients have few side effects, so Peter was able to visit Italy this fall while his treatment continues.”

“Going to Italy was the best thing that’s happened since my diagnosis,” Peter says.

“I can’t imagine a better place to deal with my cancer than HCI,” he adds. Everyone knows my first name.”

Peter and Julia donated their extensive library to the University of Nevada, Las Vegas. Next April, his former graduate students from Indiana University are gathering “to do a little program in my honor,” Peter says. “Science keeps me going. I hope to be there.”

Firsthand Account (CONTINUED FROM PAGE 1)

In his paintings, Peter taps his familiarity with classic Italian art. This portrait of his two Italian greyhounds is “from the side, like Renaissance portraits,” he says.
Meet Three New Pancreas Researchers

Eric Snyder, MD, PhD, a Huntsman Cancer Institute (HCI) investigator, recently joined the Pancreas Cancer Research Program (PCRP). He heads HCI’s Snyder Lab. His research investigates a link between lung and pancreatic cancers. Snyder and his research team study the role of proteins called transcription factors in the development of the two cancers.

Kajsa Affolter, MD, assistant professor of pathology at the University of Utah (U of U) School of Medicine, recently joined the PCRP. She is a pathologist specializing in gastrointestinal (GI) cancers. Her work supports pancreas cancer research efforts, particularly evaluating experiments involving whole tumors.

Martin McMahon, PhD, helps new discoveries move from research labs toward clinical trials for improved cancer treatments in his role as HCI’s Senior Director for Preclinical Translation. He is a professor of dermatology in the U of U School of Medicine, but in a previous position at the University of California, San Francisco (UCSF), he was co-director of the Pancreas Cancer Research Program, where he contributed much important research to the field. McMahon is the Cumming-Presidential Professor of Cancer Biology.

The Long Road to a Cancer Research Grant

Cancer research takes money, and quite a bit of it. All Huntsman Cancer Institute (HCI) researchers depend heavily on grants from the National Institutes of Health (NIH). Here’s the story of how one of the many research grants developed by members of the Pancreas Cancer Research Program grew from a question to an idea to a proposal still in review at NIH.

“Great research questions are plentiful,” says Matthew Firpo, PhD, a member of the Pancreas Cancer Research Program. “They often derive from clinical need.”

Starting earlier this year, Firpo and HCI investigators Charles Murtaugh, PhD, and Sean Mulvihill, MD, combined their interests and expertise to develop a new research proposal to the NIH.

Coming Up with the Idea

Recently published studies suggest there are four different types of pancreatic cancer, each with its own characteristics at the molecular level. Knowing the type of the cancer a patient has would allow a cancer care team to practice precision medicine, choosing the treatment that will work best for the individual patient.

The previous studies used tumor tissue from patients’ surgeries. But most patients’ tumors can’t be removed with surgery. The cancer care team needs to know the tumor type while it is still in the body.

“Our idea is to find specific proteins or other molecules that each type of tumor releases into the blood. Then a simple blood draw could show what type of pancreatic cancer a patient has,” says Firpo.

“It’s a risky undertaking that might fail for at least three reasons,” Murtaugh says. “First, our techniques for detecting molecules circulating in the blood might not be sensitive enough. Second, the tumor subtypes may not differ enough in the molecules they release to tell them apart. And third, it’s possible that when the pancreatic cancer tumors can’t be removed, the clinical outcomes are so poor that knowing which type will not be useful.”

The grant proposal addresses each of these risks. The goal is to convince the NIH peer-review panel, made up of other cancer scientists, that the risks do not outweigh the rewards of a successful outcome. The best arguments grant applicants can make are based on their own past achievements. It’s also essential to give preliminary data that shows the approach is feasible.

Collecting Preliminary Data

To be considered for NIH funding, grant proposals usually include solid data that shows the proposed study is feasible and likely to have positive results. It takes money to gather this data, but NIH offers very little funding to do so.

HCI has a disease-oriented team (DOT) dedicated to pancreas cancer research, along with nine more for other types of cancer. The DOTs choose proposals to receive
funding for preliminary studies through a competitive process that includes review by other scientists.

“We depend on Huntsman Cancer Foundation to fund preliminary studies,” says Firpo. “The foundation exists for the sole purpose of funding HCI research.”

The investigators decided it was important to submit the grant while the topic was hot rather than waiting for additional seed funding for preliminary data.

“NIH has a special category for exploratory studies such as ours. There’s less emphasis on having preliminary data that proves our approach would work,” Firpo says. “We thought our track record and the potential impact of the research would be enough to make it competitive.”

**Entering the Competition**

In July 2016, the investigators submitted their proposal for a two-year grant to the NIH. Their scientific peer-review panel meets at the beginning of November.

It is seldom an easy sell. “When you submit an exploratory grant like this, it can be hard to find reviewers with a deep knowledge of the question and approach,” says Murtaugh. “Also, with pancreatic cancer, you can run up against a defeatist feeling among some reviewers that the disease is so dismal nothing can be done. On the other hand, there are others who feel any advance against such a terrible disease is worth pursuing.”

Three members of the panel review each proposal thoroughly on five key questions (see Figure 1). They score each question from 1 (best) to 9 (worst); the overall score is the average of all five. Usually, the full panel discusses only the grants with overall scores between 1 and 5.

Another panel, called the council, decides which grants that make it past the peer review receive funding. This grant will be reviewed by the National Cancer Institute. The council has some flexibility in their selections. For example, a grant that didn't score as well as others could still get funded if it satisfies the institute’s immediate needs.

**Getting the Results**

Sometime in November, the investigators will learn how their proposal scored with the peer-review panel. If their proposal passes that panel, they'll find out whether their study gets funding in February.

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**Figure 1.** The NIH scientific peer-reviewers score each grant proposal from 1 (best) to 9 (worst) based on these guidelines.

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<tr>
<th>Significance</th>
<th>Is this work worth doing? If successful, will it have an impact on science or patient health?</th>
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<td>Investigators</td>
<td>Are these people good enough to do what they say they want to do?</td>
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<td>Innovation</td>
<td>Does this work break new ground, or is it just repeating old work with a slight difference?</td>
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<tr>
<td>Approach</td>
<td>How likely is it that the procedures will work, or that the resulting data can be analyzed in a way that will provide real insight?</td>
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<tr>
<td>Environment</td>
<td>Is this work being done in a supportive environment, with excellent facilities, equipment, and intellectual vibrancy?</td>
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“If we get funded, we could start work as soon as March 2017,” says Murtaugh, “although it could be delayed if Congress is slow in passing a budget for NIH.”

If the proposal does not pass, they will receive a critique to guide their revisions before they try again. In the meantime, they intend to ask for seed money from the Pancreatic Cancer DOT to collect preliminary data to support the proposal in case they have to resubmit.

“Getting funded on the first round would be great, but it’s pretty rare,” Firpo says. “So we're already preparing for a resubmission by collecting preliminary data.

“If our grant is funded on the first round, we'll have a head start on our study,” he adds.

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**How You Can Support Research Grants**

- Participate in the Pancreas Cancer Research Program tissue collection program. We rely on tissue samples from patients and from people who do not have cancer for our studies. For more information, call Tahnie Blackburn at 801-585-6048.
- Give to Huntsman Cancer Foundation and the Pancreas Cancer Research Program. Your donations directly support the research that helps us convince the NIH to invest in our work.
- Let your representatives in Congress know why you support ample NIH funding for cancer research. The NIH will always be our best source of long-term investment in research.