

Summer 2019



Making Treatment Easier for Kids

Ella loves the feel of the fiber optics.

Donations provide special products that can distract and relax

Cancer and blood disorder treatments can be very scary for kids — full of loud, unfamiliar noises, bright lights, strange people, discomfort and pain. For children with high anxiety, special needs or ongoing pain, doctor visits and treatment sessions can be nearly unbearable.

That's why Roswell Park Child Life Specialist Jessica Krahmer wanted to create a special environment that would ease the experience for them. **She was able to develop it and put it into action thanks to generous donations made through Roswell Park's Quality-of-Life Program.**

It's called a multisensory environment, and it helps children by creating distraction or relaxation. Different institutions set theirs up in different ways, according to their facilities and patient needs. So in the outpatient setting of the Katherine, Anne and Donna Gioia Pediatric Hematology Oncology Center, based on the space, the layout and the way the clinic runs, Krahmer determined that a set of individual, portable products would work best.

"This way we could have multiple items out at once and in use by different patients. So instead of having one large item on wheels or one full

room, it made sense to have multiple items that we can bring together to change the environment or use in different rooms. It's all about what the patient needs in the moment," she says.

The products she chose for Roswell Park's pediatric patients are a tabletop bubble tube; fiber optics; an LED projector and slides; weighted blankets; noise-reduction headphones; and a sound machine.

Krahmer begins by assessing each patient's needs and talking with parents or guardians about the positive effects the products could have for their child.

Each item helps by providing distraction; control; relaxation; de-escalation; and/or normalization. If a child needs help relaxing for their treatment, for instance, Krahmer or another member of the psychosocial or medical staff might bring in a weighted blanket, whose pressure relaxes the body by making you feel like you're getting a warm hug. Or if the patient is feeling anxious and needs distraction, they might try the LED projector and slides. Together they can talk about the pictures on the slides, and the child can create a story about them.

(continued on back page)

What's Inside

FIND OUT HOW WE'RE USING THE **MICROORGANISMS** IN OUR DIGESTIVE TRACT TO FIGHT **CANCER!**

(see page 2)

- Art Heals: And We Have the Science to Prove It p4-5
- Donor Support Helps Launch Five New Research Projects This Spring p6-7



Exploring How the MICROBIOME Affects Cancer – and Vice Versa

Your gifts are helping researchers connect the dots

How well do you know your microbiome? Microbiomes are composed of the trillions of microbes living in our bodies, most of which inhabit our digestive system. Microbes are microscopic organisms, including (but not limited to) bacteria, viruses and fungi. Some help with digestion; some can make us sick; others stimulate the immune system and help keep us healthy. Most are harmless.

Your microbiome changes throughout your life. As a baby, you pick up some microbes from your mom. You get others from the food you eat, the type of place you live in, even your pets. Each one is highly personalized.

Recently, we have come to understand that our microbiome can have profound impact on the activity of our immune system. **This observation has led our clinical and basic researchers to begin studies manipulating the microbiome to further enhance immunotherapies for cancer.** Further insight into the complex interaction between our microbiome, our health and fighting off cancer will lead us to new and novel approaches.

Roswell Park Comprehensive Cancer Center already has a number of ongoing projects in this area of research. To enhance and share our research in the field of microbiome science, the Alliance Foundation has partnered with Roswell Park scientists to unify our approach. The collection and analysis of microbiome data from the diverse research projects funded through the Alliance Foundation will be centralized and available for the Roswell Park community to enhance our understanding of the microbiome and how it interacts with other immune therapies, as well as to further explore how the microbiome can be manipulated to help patients.

This March, your donations to the Roswell Park Alliance Foundation provided four pilot awards to explore different roles, influences and connections in this intriguing area. These studies are part of a larger microbiome initiative that is led by Brahm Segal, MD, Chair, Department of Internal Medicine; Susan McCann, PhD, RD, Department of Cancer Prevention and Control; and Emese Zsiros, MD, PhD, Department of Gynecologic Oncology.

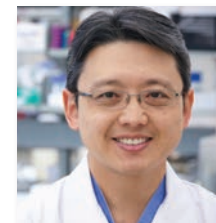
Here are the four new projects and their lead investigators:



• Grace Dy, MD, Chief of Thoracic Oncology, is leading a team investigating **the effect of a particular targeted cancer therapy on the gut microbiome function and flora** of patients with a specific kind of advanced non-small-cell lung cancer. They will also seek to determine how acquired resistance to a specific cancer treatment may be related to the gut microbiome.



• Khurshid Guru, MD, Chair, Department of Urology, and Li Tang, MD, PhD, Department of Cancer Prevention and Control, are leading a study exploring **the role of the urinary microbiome in bladder cancer.** The traditional concept that the urinary tract is sterile has changed over the past five years. We are investigating the changes that occur to the bacteria that are normally present in urine; whether they can promote the development of cancer or affect tumor response to different therapeutic agents; and how lifestyle changes can affect them.



• Fumito Ito, MD, PhD, Department of Surgical Oncology and the Center for Immunotherapy, is heading a study exploring biomarkers — substances that give doctors measurable signs about how well a treatment is working. The team will explore **whether changes in a particular biomarker correlate with the gut microbiome composition** in patients who respond to the immunotherapy called checkpoint inhibitors, which block proteins that stop the immune system from attacking cancer cells. This could help us better monitor how well treatment is working in a patient and could lead to innovative new approaches in cancer immunotherapy.



• A team led by Dr. Zsiros will study **how the composition of the gut microbiome affects response to immune checkpoint inhibitors** in patients with epithelial ovarian cancer. The team will also study how manipulating the composition of the gut microbiome could improve the responses to immunotherapeutic agents in cancer patients.

Further insight into the complex interaction between our microbiome, our health and fighting off cancer will lead us to new and novel approaches.



Art Heals:

AND WE HAVE THE SCIENCE TO PROVE IT

Can looking at art help patients heal — physically, psychologically and emotionally — after cancer surgery? That's a question Khurshid Guru, MD, Director of Robotic Surgery and Chair of Urology at Roswell Park, has taken a special interest in answering with scientific evidence.

Because of his work in robotic surgery, Dr. Guru understands the strong connection between the eyes and brain. He wondered if the same connection could impact the healing process.

To find out, Dr. Guru and his team worked in collaboration with Buffalo's Albright-Knox Art Gallery's Innovation Lab to design a controlled clinical trial — possibly the first clinical trial of its kind — and generous donations to both the Albright-Knox and Roswell Park helped make it happen with the creation of the Art Heals gallery.

"While studies have been done in the past about how creating art affects the patient, this one focuses on the effects of just experiencing art," explains Jenna Bizovi, Assistant Director of the ATLAS Program and Manager of the Art Heals gallery.

Curated with the expert direction of community partners at the Albright-Knox, the first exhibit featured photography, painting, sculpture and mixed-media pieces. The pieces were not from the Albright-Knox's collection but were selected by Albright-Knox curators to represent a range of media and subjects. The works were on loan for the duration of the study, and the artists were all

regionally/nationally recognized, many with pieces in permanent collections of museums and private collectors.

With donations from a number of individuals who recognized the value of art to a patient's well-being, the Art Heals gallery was born. A dedicated gallery for the artworks was built out in vacant space in Roswell Park's hospital, providing easy access for patients enrolled in the study.

RoseAnn Berardi, Chair of the Alliance Foundation Art Committee, recalls stepping into the gallery when it was finished. It took her far beyond her expectations. "I was in awe. My heart stopped."

With everything in place, all that was left to do was introduce patients to the new gallery.

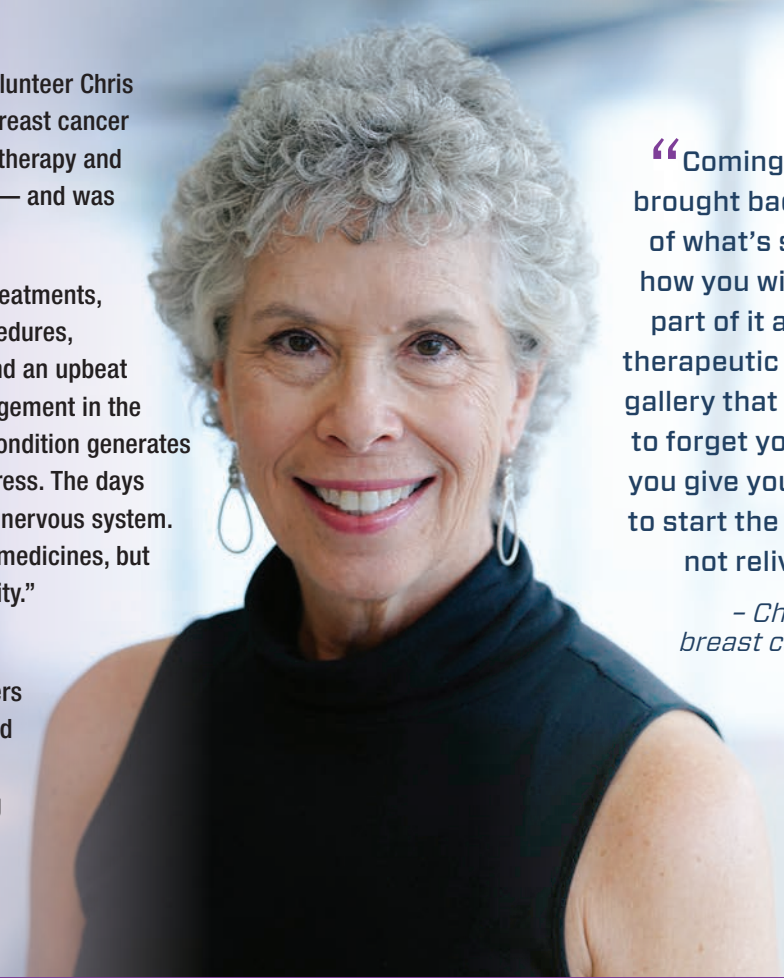
Significant Decrease in Anxiety

Eighty patients who were hospitalized for two days or more following surgery agreed to participate and were randomly assigned to one of two groups. Patients in the first group visited the art gallery for 15 minutes a day in addition to receiving standard of care medical treatment, while those in the second did not visit the gallery and only received standard of care. All participants completed questionnaires along the way, reporting their levels of pain and anxiety as well as their satisfaction with the care they received. Dr. Guru and his team then compared the answers given by patients in both groups.

Longtime Roswell Park Alliance volunteer Chris Eberle was in the middle of her breast cancer treatments in February 2018 — chemotherapy and immunotherapy, surgery and radiation — and was having a long, stress-filled day.

"There are so many people providing treatments, and so many demanding, invasive procedures, that it's difficult to keep a level head and an upbeat outlook," she says. "The constant engagement in the processes and understanding of your condition generates high emotional as well as physical distress. The days spent in treatment tend to shatter your nervous system. So you're not only recovering from the medicines, but also working to regain emotional stability."

Then she stepped into Roswell Park's brand-new art gallery. As she remembers that moment, her shoulders relaxed, and she felt a real sense of relief. "It was peaceful. It was quiet. And while sitting on a bench, appreciating a work of art, there was an instant reprieve from the demands of the disease," she recalls.



"Coming into the gallery brought back a mindfulness of what's still outside and how you will survive and be part of it again. There is a therapeutic connection in the gallery that briefly allows you to forget your diagnosis. So, you give yourself permission to start the next chapter and not relive the last."

— Chris Eberle,
breast cancer survivor

Halfway through the study, the research team wrote an abstract, a summary of the study with results up to that date. The abstract — which was presented at the annual meeting of the American Urological Association in May — revealed that patients who visited the art gallery experienced a statistically significant decrease in anxiety compared with those who did not view the artwork.

Now that the study is complete, the team plans to write a paper about the results and submit it to a peer-reviewed journal.

As for the Art Heals gallery, it will soon be opened for all Roswell Park patients to enjoy. The Roswell Park Alliance Foundation Art Committee will provide ongoing jurying of works to be on display, selected from among the 1,800 works of Roswell Park's collection as well as new pieces purchased specifically for the gallery, and will train docents to interpret the works for visitors. In addition, the space will be made available for certain Roswell Park wellness programs, such as Mindfulness Meditation.

"The combination of Dr. Guru's vision and the Albright-Knox curatorial expertise has not only produced a potentially groundbreaking study, but has resulted in yet another program offered at Roswell Park that is devoted to the very important holistic care of our patients and their families," says Cynthia Schwartz, Director of the Alliance Foundation Ambassador Program. **"We owe a debt of gratitude to our donors, our Art Committee volunteers and our partners at the Albright-Knox who shared Dr. Guru's determination to scientifically prove what we all instinctively know — art is a healing factor in all our lives."**



Donor Support Helps Launch Five New Research Projects This Spring

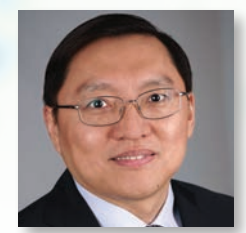


Generous donations have set in motion some groundbreaking new research taking place at Roswell Park this year. Twice a year, the Alliance Foundation's Scientific Advisory Committee (SAC) announces a call for grant applications to Roswell Park's research community. These grants provide seed funding for our researchers to launch ideas that have demonstrated the potential to impact patient care and save lives. This year, donations included a special grant from the 2018 11 Day Power Play's Community Shift, among other gifts from generous Roswell Park supporters. This past March, the committee received 40 applications. After a competitive peer-review process, it awarded grants to the five projects deemed to have the most promise for finding cancer cures and saving lives.

“Attending the Roswell Park Alliance Foundation's Scientific Advisory Committee peer review was an exciting and reassuring opportunity. We observed the important and rigorous process as highly skilled scientists and research groups presented in great detail their emerging technologies to fight cancers. To see world-class cancer research projects and the highly credible experts closely evaluate each and every proposal reassures us that The 11 Day Power Play's fundraising efforts contribute to real advances in research and science right in our backyard.”

—Amy Lesakowski, Co-Founder and Executive Director, The 11 Day Power Play

Here are the projects that were selected by the SAC to receive these grant awards, totaling \$468,848:



Bladder Cancer

Bladder cancer is a common cancer that is often treatable, but when it invades the bladder's muscle layer, it becomes life-threatening. Many patients with this level of disease do not respond to chemotherapy. This study seeks to: 1. determine a way to predict which patients will respond to chemotherapy, and 2. identify an additional treatment that will help chemo kill more bladder cancer cells and help more patients respond to chemotherapy.

Qiang Li, MD, PhD, Department of Urology



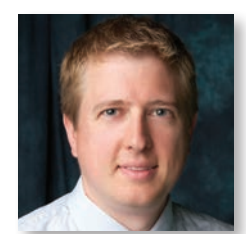
Immunotherapy

We all have immune cells that can kill cancer cells. However, their effectiveness can be hampered by certain blood cells expanded in cancer that fail to fully mature and function properly to support immune cell killing. This study seeks to understand where these immature cells develop and how to promote their maturation into normal functioning cells, thus preventing them from impeding the cancer-fighting immune cells.

Scott I. Abrams, PhD, Department of Immunology



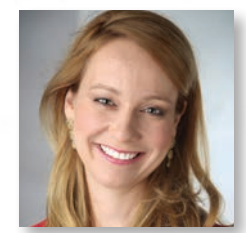
*The award to Dr. Abrams' study came from contributions from The 11 Day Power Play's Community Shift in summer 2018. Community Shift contributions are also supporting a number of other research and wellness programs at Roswell Park.



Non-Hodgkin Lymphoma

Certain kinds of non-Hodgkin lymphoma have very low survival rates because the disease is resistant to existing therapies. We will explore the mechanisms behind why some lymphomas are more resistant and seek to develop new approaches that will work against this cancer. Our findings may be relevant to other difficult-to-treat cancers as well.

Matthew Barth, MD, Department of Pediatrics



Pain Management

Opioids are important in managing chronic and cancer-related pain. However, they are also the primary medications managing pain after surgery in the U.S. despite limited evidence on the amount necessary for adequate pain management and potentially serious side effects that can get in the way of healing and well-being. In order to promote the best possible recovery and quality of life for our patients, Roswell Park developed and implemented new postoperative opioid prescribing guidelines for surgical patients based on extensive research and consultation with experts from many different disciplines.

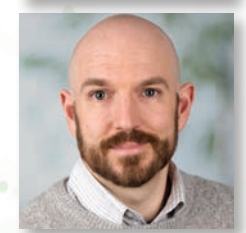
This new study aims to determine the impact of new postoperative opioid prescribing guidelines on our surgical patients' recovery, risk for conversion to a chronic user, and satisfaction about pain management, while also gaining a better understanding of the relationship between daily opioid dose and its impact on cancer survival. Results of this study can have enormous national impact on opioid prescribing policies, and our goal is to make Roswell Park the leader in this transformation by providing evidence-based guidelines for all health care providers in the U.S.

Emese Zsiros, MD, PhD, Department of Gynecologic Oncology



Soft Tissue Sarcoma

Soft tissue sarcomas (STS) are cancers that primarily affect children and young adults, with 10,000-15,000 new cases each year. Their causes are still unknown, but new data show that STS tumors have a never-before-seen type of change to their genetic material, where the genes turned on or off are different than in tumors without these changes. This study will pursue deeper understanding of these changes and of how common they are in STS, with the goal of identifying new treatments for our patients.



Joyce Ohm, PhD, Department of Cancer Genetics and Genomics, and Scott Olejniczak, PhD, Department of Immunology

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Krahmer was a student when she first learned about the effect the multisensory environment can have. “One reason that I’m a big believer in sensory items is because as a student, I worked with an 8-year-old patient who had spinal muscular atrophy. She was in a lot of pain, and the medical team was having a hard time controlling it.

“But when the sensory items were brought into her room, you would physically see her relax more, and you could track her heartbeat going from high into a normal range because she felt so much more relaxed. And that was one of the only times when they could get her heartbeat down, get her relaxed and control her pain.

“Having watched that made me realize how big an impact these items can have on a child in any of those three categories. I think pain is the one where people are surprised it works. But it’s the same theory as distraction, and when you’re distracted, you can be not thinking about your pain. We know that when you’re relaxed, like just taking deep breaths, it can limit pain.

“That was my inspiration coming into this project and applying for the grant. That I know that these children go through a lot, and they are constantly, constantly battling something, and this is a non-pharmaceutical way, a very simple way, that we can help them.”



Jessica shows Ella how the tabletop bubble tube works.