OCRC
OVARIAN CANCER RESEARCH CENTER

Penn Medicine

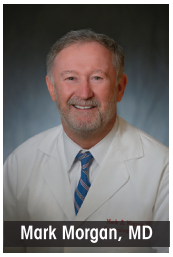
AUTUMN 2017

Director's Message

Dr. Drapkin was awarded the 2017 Rosalind Franklin Prize for Excellence in Ovarian Cancer Research by the Ovarian Cancer Research Fund Alliance (OCRFA).

At Penn Medicine's Ovarian Cancer Research Center (OCRC), we strive to eradicate ovarian cancer by developing novel therapeutics and early detection methods aimed at improving the lives of women living with gynecologic malignancies. This year, 22,000 women worldwide will be diagnosed with ovarian cancer, and more than 75 percent of these women will be diagnosed at an advanced stage. When diagnosed in Stage I, there is a 90 percent survival rate.

Ovarian cancer is one of the most genetically complex cancers to study, which makes it exceptionally challenging to diagnose; often called the "silent killer", we have recently begun to understand that ovarian cancers actually begin in the fallopian tubes. This vital discovery is allowing us to make advances in diagnosis, prevention, and treatment – advances that will save lives from a devastating disease that has previously had few viable treatment options.



Mark Morgan, MD

The OCRC focuses on understanding the pathogenesis and genetic alterations involved in women's cancers, with the intent to translate these important biological principles into clinically useful diagnostic and therapeutic tools. In conjunction with **Mark Morgan, MD**, Chief of the Division of Gynecologic Oncology, who has built an accomplished and sophisticated team of surgeons and physician-scientists, we are truly changing the landscape of ovarian cancers. Our continuing commitment to innovative, personalized care, and creative collaboration allows us to remain at the forefront of treating gynecologic cancers.

In this issue of the OCRC Newsletter is a Q&A with Fiona Simpkins, MD, a physician-scientist who will give an insight into her work on novel targeted drug combinations that stop the growth of ovarian cancer cells. You will also read several inspirational stories of generous supporters and partners, including the Tina Brozman Foundation, photographer Ellen Fitzgibbon, and the establishment of the Helene Ross Bogutz Ovarian Cancer Early Detection Symposium.

We look forward to continuing to share our progress and successes with you.

Ronny Drapkin, MD, PhD
Franklin Payne Associate Professor of Pathology in Obstetrics & Gynecology
Director, Penn Ovarian Cancer Research Center
Director, Gynecologic Cancer Research, Basser Center for BRCA

The Helene Ross Bogutz Ovarian Cancer Early Detection Symposium

Over the past six years, Helene Ross Bogutz bravely fought stage 4 ovarian cancer, ultimately losing her battle on February 25, 2017. Before Helene passed away, she selflessly dreamed of ways to improve outcomes for other women facing this insidious disease. Helene and her husband, Jerry, decided to establish the Helene Ross Bogutz Ovarian Cancer Early Detection Symposium at the University of Pennsylvania to provide scientists and clinicians from across the country a forum to come together, discuss, share, and collaborate on novel early detection research and ideas. Co-led by Drs. Drapkin and Morgan, the first annual Helene Ross Bogutz Ovarian Cancer Symposium on Early Detection Strategies will be held on October 16, 2017 at the Biomedical Research Building at the Perelman School of Medicine. The Bogutz Family's generosity and vision for a future free of ovarian cancer will pave the way for scientific collaboration and medical discoveries aimed at curing women's cancers. For more information and to register please visit *www.med.upenn.edu/crrwh/helene-ross-bogutz-symposium.htm.*

NEWS

Immunotherapy Update

Daniel J. Powell, PhD, Associate Professor of Pathology and Laboratory Medicine at the OCRC, focuses his research on novel immunotherapy technologies that repair, stimulate, and enhance the body's immune system to fight ovarian cancer. Dr. Powell and his team have developed a unique method to isolate immune cells that are able to sniff out the cancer cell, identify it, and kill it – a lasting and potentially curative response. A subset of T cells in ovarian cancer possess a marker called CD137, and this rare subset of naturally occurring CD137 T cells is uniquely able to recognize ovarian cancer cells and inhibit the ability of the cancer cells to grow in the body. While these tumor-reactive T cells can kill cancer cells, they also express various proteins, or "immune checkpoints", that stop immune cells from efficiently killing cancer cells. Two of these immune checkpoints are called PD-1 and CTLA4. Dr. Powell and his team have tested antibodies that block these proteins and may trigger a tumor response in ovarian cancer patients. This combination antibody therapy was selected amongst twelve competing groups for clinical advancement, and is currently open to accrual for women with recurrent ovarian cancer. To learn more about eligible clinical trials, please contact 215-662-4484. Dr. Powell and his clinical colleagues are leading the way in immunotherapy by using these immune checkpoint blockades to rev up a patient's own immune response against their cancer by "cutting the brake" on the immune system.

Janos Tanyi, MD, PhD, Assistant Professor of Obstetrics and Gynecology, is the Principal Investigator of immunotherapy clinical trials in Penn Medicine's Division of Gynecologic Oncology. Dr. Tanyi's clinical research focuses on antitumor immune

An Interview with Fiona Simpkins, MD

Assistant Professor of Obstetrics & Gynecology

How would you explain the broader significance of your research to a layperson?

The focus of my research is to identify new treatment strategies in the laboratory with the ultimate goal of bringing these therapies into the clinic for ovarian cancer patients. We have developed experimental cell and mouse models that represent each patient's unique tumor biology. For example, at the time of an ovarian cancer surgery, tumor is removed and grown in culture plates to study genes and protein pathways unique to that tumor. The tumor is also transplanted into the ovaries of several mice, which then develop ovarian cancer. These mice serve as avatars of the patient's tumor for testing novel therapies. These tumors are very loyal to the original tumor from the patient, and therefore create a safe and unique opportunity to understand how tumors may become resistant to drugs and to test new therapies. Once we identify a drug combination that shows promise in these avatar models, we work to move that therapy into the clinic as a new treatment option for ovarian cancer patients.

What does an average day as a scientist and surgeon look like for you?

What I especially love about my work as a surgeon-scientist at Penn Medicine is that every day is different. One day I will see patients in the clinic where I treat patients using novel agents in clinical trials. The next day, I am in the operating room taking care of patients by surgically removing gynecologic cancers, such as ovarian cancer. Other days, I am in the laboratory with my research team brainstorming experiments to answer scientific questions. Then there are weekends… for grant writing to obtain critical funding to advance research and provide hope to my patients.

What led you to gynecologic oncology?

I was drawn to the field of gynecologic oncology as it is one of the few specialties that take care of patients with cancer, both medically and surgically. For example, as a gynecologic oncologist, we take care of a patient from diagnosis, through surgery and treatment. I feel it is truly a privilege to take care of women with gynecologic cancers. It's a journey I feel honored to take with my patients. My daily experiences in the clinic drive me to the laboratory to try to answer important questions we have to find better and more effective treatments to eradicate ovarian cancer.

How many years have you been at Penn's Ovarian Cancer Research Center (OCRC)?

I joined the Division of Gynecology Oncology at Penn three years ago. On the clinical side, I am fortunate to work with leaders in the field of Gynecology Oncology such as Dr. Mark Morgan, the Division Chief, and Dr. Bob Burger, the Director of Clinical Research. As part of the OCRC, I work with scientists who are leaders in the field of ovarian cancer research. Under the leadership of Dr. Drapkin, the environment fosters collaborative, cutting-edge, team science. It will be a team – not one person – that will cure this disease. We at the OCRC are up for the challenge.

What has been your proudest moment or greatest achievement so far in your career?

That's a hard question. I have to say it's the many moments I share with my patients which make me feel most proud and fulfilled. It's a fleeting facial expression of thankfulness or a hand squeeze confirming we are fighting their disease together. It's the meeting with the patient's family after a surgery…all moments which give me energy and a sense of fulfillment.

What is your hope for the future of ovarian cancer research?

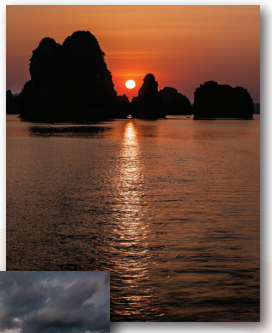
I hope that NIH funding for ovarian cancer research continues and is not decreased. I hope that we will continue to partner with our philanthropic community, who are critical helping us push the science forward. I hope in the near future that we can eliminate ovarian cancer. Whether it is by discovering a way to prevent it, or by curing it altogether….that would be a dream come true.

When you are not in your lab, what are your hobbies?

I love to travel, learn about other cultures, and meet people from other countries. I really enjoy cooking recipes my French grandmother taught me when I was a young child. I love spending time with family. I also enjoy bike rides and team sports.

Shooting For A Cure: Ellen Fitzgibbon, VMD

In July 2014, Ellen Fitzgibbon was diagnosed with stage 3C ovarian cancer, seemingly out of nowhere. A veterinarian by trade, Ellen was otherwise healthy and active, working full time, traveling the world, and enjoying a hobby of photography. After a few weeks of vague symptoms, including intermittent abdominal pain, frequent urination, and fatigue, Ellen discovered a mass in her abdomen and went to the emergency room. Several days later, Ellen underwent surgery at Penn Medicine's Abramson Cancer Center (ACC) under the care of Dr. Mark Morgan to remove her ovaries, uterus, lymph nodes, and part of her colon. Today Ellen is celebrating her second round of remission and continues to be treated at the ACC. Ellen's passion for helping others has led her to raise awareness of and put a face to ovarian cancer. She celebrated the opening of her first photography exhibition on March 26, 2017 at Pour Richard's Coffee Company in Devon, PA, and will be donating 50% of the proceeds of all photography sold throughout the exhibition, and on her website, to Penn's Ovarian Cancer Research Center. To find out more about Ellen's story or to purchase photography, please visit: *www.shootingforacure.net*.



Photos by Ellen Fitzgibbon

Tina's Wish

The Honorable Tina Brozman Foundation

In 2008, The Honorable Tina Brozman Foundation, Inc., "Tina's Wish", was established in memory of the late Judge Tina Brozman by her husband, Andrew Brozman. Tina was the youngest judge in the Southern Bankruptcy Court, and later became Chief Judge. In 2005, Tina was diagnosed with ovarian cancer. Tina was not angry for having been diagnosed with the disease, but she was angry that there were no effective early detection methods for ovarian cancer. Tina bravely fought her battle with ovarian cancer, and passed away in 2007. Her dying wish was to establish a foundation with a focus on early detection and prevention research.

Tina's Wish was established with the New York legal community rallying around the cause. Each Fall, Tina's Wish hosts its annual benefit dinner fundraiser. In its first year, the dinner raised $500,000. Last year, the benefit dinner raised a record $1.8 million for early detection research. This year Tina's Wish is celebrating the 10th anniversary of its benefit dinner. In addition to this dinner, Tina's Wish also hosts Lunch and Learns, Cocktails for a Cause, and has a Junior Advisory Board aimed at finding the next generation of philanthropic partners. The Junior Board, now in its third year, hosts trivia nights, spin events, and a summer cocktail reception.

Since 2010, Tina's Wish has donated over $1 million to Penn Medicine's Ovarian Cancer Research Center. More recently, Dr. Drapkin, was awarded the Consortium Grant from the Foundation in September 2017 for the project: "Integration of Advanced Genomic and Bioengineering Approaches for Early Detection and Prevention of Ovarian Cancer". This grant, the largest grant awarded by the foundation to date, totals $900,000 over three years. It will enable Dr. Drapkin and his collaborators at Johns Hopkins, Memorial Sloan Kettering, and the Wistar Institute to develop novel, out-of-the-box approaches to early detection of ovarian cancer. "I am excited to lead this new effort. We will combine state-of-the-art genomic approaches with nanotechnologies, and targeted therapies to identify and eradicate early ovarian cancers. We are grateful for the support from Tina's Wish and I am committed to the goals of our project and the patients that will benefit from our work."

With the support of Tina's Wish, OCRC scientists are able to translate viable early detection ideas from the lab into the clinic. To learn more about The Honorable Tina Brozman Foundation, Inc., please visit *tinaswish.org*.

NEWS (Tanyi continued)

responses in ovarian cancer. One of Dr. Tanyi's projects is looking at the expansion of dendritic cell vaccines as a first line treatment for ovarian cancer. The immune cells that pick up the tumor unique proteins (antigens) and present them to the immune system are called dendritic cells. After a dendritic cell picks up tumor antigen, it travels to the lymph nodes (the working stations of the immune system) and activates lymphocytes (the soldiers of the immune system). Lymphocytes exit the lymph nodes and seek the tumor, where they attack and kill tumor cells. Ovarian, fallopian tube, and primary peritoneal carcinomas over-express oncogenes such as Her-2, Her-3, and C-Met. The over-expression of these oncogenes is associated with bad prognosis and decreased survival. Dr. Tanyi is looking to generate a dendritic cell driven immune response against these three proto-oncogenes. If a patient's tumor sample shows over-expression of these oncogenes, the patient will undergo for apheresis in order to collect the dendritic cells. Once the dendritic cells are collected, they will be activated against these three oncogenes in the laboratory and re-infused to the patient to accelerate the development of a strong immune response. The ovarian cancer immunotherapy trials that are currently being conducted are highly personalized, and each aims at "training" a patient's body to fight their individual and unique tumor.

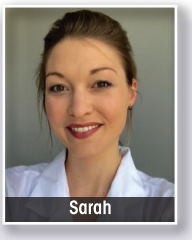
Breakthrough Bike Challenge

The Penn Gyn Oncology (GO) Discover team raised over $6,500 through the Breakthrough Bike Challenge to support cancer research at the Abramson Cancer Center.

The Penn OCRC Breakthrough Bike Challenge team.

A ***SHOUT OUT*** to Our Trainees!


Daniele


Sarah


Jagmohan


Paul

Dr. Daniele Chaves-Moreira, a postdoctoral researcher in the Drapkin lab, was awarded the 2018 Ann Schreiber Mentored Investigator Award from the Ovarian Cancer Research Fund Alliance (OCRFA) for her project "Isolation and Characterization of the PAX8 Transcriptional Complex".

Dr. Sarah Stuckelberger, a postdoctoral researcher in the Drapkin lab, was also awarded a 2018 Ann Schreiber Mentored Investigator Award from the OCRFA for her project "Development of a novel syngeneic model system for ovarian cancer research".

Dr. Jagmohan Hooda, a postdoctoral researcher in the Drapkin lab, was awarded the 2017 Ann Schreiber Mentored Investigator Award from the OCRFA for his project "Loss of H2Bub1 rewires glutamine metabolism during progression of HGSOC".

Dr. Paul T. Kroeger Jr, a postdoctoral researcher in the Drapkin lab, was awarded a three-year NIH F32 Postdoctoral Research grant for his project "An in vivo model for CCNE1 amplified tumorigenesis".

In February of this year, several member of the Powell Lab attended and presented at the 20th Annual Translational Research Cancer Centers Consortium (TRCCC) in Seven Springs, PA. The TRCCC brings together investigators from 12 Regional Cancer Centers to present and discuss cutting-edge translational research in the area of Cancer Immunotherapy. Suffice it to say, Powell lab attendees represented the Center well and landed a whopping 28.6% (4/14) of all possible Speaker Awards.

Speaker Awards from the 20th Annual TRCCC conference:

Alba Rodriguez-Garcia .....Tumor Microenvironment Session; 2nd place; Powell Lab

Anze Smole .....Emerging Therapies; 1st place; Powell Lab

Nicholas Minutolo .....Cell Therapies Session; 1st place; Powell Lab

Prannda Sharma .....Poster Session; 2nd place; Powell Lab

OCRC
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Please consider becoming a philanthropic partner!
To support penn's Ovarian Cancer Research Center
please contact Carolyn Brown at 215-573-0550 or brownca@upenn.edu.