Discovery to Cure at Yale School of Medicine

October 2014

Discovery to Cure Beverly Levy Walk

On September 28, 2014 over $181,000 was raised with over 400 registered walkers!

Contributions and participation support the research of Discover to Cure at Yale which is focused on discovering new methods of prevention, early detection and treatment of women's reproductive cancers. The program also supports patient well-being programs that enhance the quality of life of women and their families while coping with these diseases.

Getting to Know the Dedicated Discovery to Cure Staff...

"The greatest honor society can pay to a human being is to be a doctor."
– Peter E. Schwartz, M.D.

PETER E. SCHWARTZ, M.D.
John Slade Ely Professor of Gynecology, Obstetrics and Reproductive Sciences; Vice Chair, Gynecology; Section Chief, Gynecologic Oncology

If it weren't for his boyhood friend's mother...a mishap in an independent research project at Union College...and a chance opportunity in a summer lab job while attending Albert Einstein College of Medicine...Peter E. Schwartz might never have become the distinguished, highly accomplished and beloved gynecologic oncologist, surgeon and cancer treatment innovator he is...

Join Our Mailing List!

DISCOVERY TO CURE

Discovery to Cure advances the prevention, early detection and treatment of women's reproductive cancers.

Would you like to get involved in the lifesaving work of Discovery to Cure?

We welcome volunteers to help us with special events and community outreach.

For more information please e-mail discoverytocure@yale.edu

To make a donation please click here.

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Please consider forwarding this e-mail to a friend.

Growing up in Laurelton, Queens, New York, young Peter Schwartz gave little thought to what he would do with his life. Yet at every step along the way, fate was propelling him toward his destiny as the John Slade Ely Professor of Gynecology, Obstetrics and Reproductive Sciences and Vice Chair of Gynecology at the Yale School of Medicine.

Dr. Schwartz's mother, who had emigrated from Latvia in 1926, and his American-born father, a production manager in the men's clothing industry, were unaware that New York City 8th graders could take a test for admittance into one of the city's three specialized high schools. But Peter's best friend Stanley's mother knew and sent the two boys to be tested at Brooklyn Tech.

"It was huge – the most impressive building I'd ever seen," Dr. Schwartz recalls. "Some of the floors were two or three stories high. They were actually constructing a house inside the building." Since he'd always enjoyed working with his hands, Peter Schwartz was excited when he was accepted at Brooklyn Tech. But he soon discovered that engineering was not for him.

"In those days, there were basically three career options for boys: engineer, lawyer, or doctor."

"That left lawyer or doctor. Do you remember that television show, Perry Mason?" Dr. Schwartz chuckles at his memories of the popular network series in which Raymond Burr played an attorney. Young Peter didn't much like that show. He decided he didn't want to become a lawyer. So, he sought the advice of his family physician about a career in medicine. After telling young Peter about his World War II service in the South Pacific and showing him a faded telegram warning that their Red Cross tent was going to be bombed and to evacuate immediately, the physician looked at Peter and declared, **"You should be a doctor."**

It will come as no surprise to his many admiring patients that while attending Union College in Schenectady, New York, Peter Schwartz made a discovery. The science courses that interested him most were those that related to people. It was there that fate again pointed the way.

While conducting an independent study on "The Regeneration of Hydra," he faced a crisis...

It happened while Dr. Schwartz was conducting an independent research study on the regeneration of hydra, which required a regular diet of brine shrimp. One Saturday, when the Union College student was dipping into the vat of brine shrimp to feed his hydra, he discovered a large hole in the net. Without their dinner, the hydra would perish and the study would fail. Because it was Saturday, no one was around except the building handyman, Joe. He had no more nets, but handed Peter a needle and thread. He'd never sewed, but the success of his research project was on the line, so he mended the net. Joe looked at Peter's neat stitches and exclaimed, **"You should be a surgeon!"**

Fate once again intervened at Albert Einstein College of Medicine.

Between his first and second years at the prestigious New York City medical school, Peter Schwartz landed a summer job in the lab of cardiovascular surgeon, Dr. Robert Goetz. Dr. Schwartz remembers clearly that it was a Wednesday and he was observing the resident physicians perform cardiovascular surgery on a dog. When the vascular procedures were completed, the residents instructed Peter to suture the dog's skin incision sites. After observing his work for two days, Dr. Goetz handed the second year medical student a special project.

The challenge was: "How to connect a larger vein to a smaller artery using a newly available tissue adhesive, i.e. glue." The gifted future surgeon solved the problem successfully by using tubes in graduated sizes. "Non-Suture End-to

End Anastomosis of Small Blood Vessels", was published while Dr. Schwartz was still in medical school. He was accorded the honor of being invited to help as a volunteer in the Albert Einstein Operating Room, where he discovered his lifelong passion for surgery.

The road to the University of Kentucky and to his "home" at the Yale School of Medicine.

At the University of Kentucky, Dr. Schwartz selected obstetrics and gynecology for his surgical internship and residency. He married Arlene, the love of his life and has never looked back. For more than 40 years at the Yale School of Medicine, women being treated for ovarian, uterine and other gynecologic malignancies have looked to Dr. Peter E. Schwartz for the caring and innovative treatments that are the hallmark of Discovery to Cure. Many of his theories, therapies and pioneering procedures, as well as his interdisciplinary approach are recognized as the gold standard of care for women's reproductive carcinomas.

The proud grandparents of four, Dr. Schwartz and his wife Arlene enjoy watching the seasons change in Connecticut where they raised their three sons, Bruce, Andrew and Kenneth.

Interview and Article by
Janice P. Marcus, Contributing Editor

Yale School of Medicine Department of Obstetrics and Gynecology Study is First to Demonstrate the Direct Correlation Between Ovarian Cancer and Ovulation

Usually diagnosed only at advanced stages, due to the lack of distinctive symptoms and specific markers, ovarian cancer is the greatest concern of the gynecologic cancers -- and the most lethal. Considerable efforts to develop early detection tests have been hindered by limited knowledge about the origin of the disease.

A growing number of studies have revealed that the majority of ovarian cancers develop from multiple origins outside of the ovaries, including the fallopian tubes, cervix, gastrointestinal tract and endometriosis. One of the main questions in understanding and developing effective treatment for ovarian cancers is...why do these extra-ovarian malignant cells migrate to the ovaries and establish tumors there?

A recent study conducted by the Yale School of Medicine Department of Obstetrics and Gynecology* is the first one to demonstrate in an animal model the direct correlation between ovarian cancer formation and ovulation. These finding explain why frequent ovulation may, in fact, increase the risk for ovarian cancer.

The study demonstrates that ovulation and the consequent rupture of the surface epithelium (covering tissue layer) of the ovaries is a requirement for and "facilitator" of "recruitment" and attachment of malignant cells. Moreover, during ovulation, secretions promote both migration and adhesion of malignant cells to the ovaries. Following ovulation, the "corpus luteum," the structure left in the ovary at the site where an ovum was released, provides a rich "soil" or matrix for malignant cells which have attached in the stroma (supporting framework) of the ovaries. This ovarian environment may regulate the transformation of cancer precursors or pre-malignant cells into fast-growing

tumors.

The Yale study data showed for the first time in an animal model that malignant cells originating from outside of the ovaries can be specifically recruited into the ovaries during ovulation, thereby explaining the different types of ovarian cancer, as well as why frequent ovulation may be a risk for ovarian cancer. Understanding this association will lead to the development of improved preventive strategies and more specific markers for early detection, thus reducing the number of women afflicted with ovarian cancer and providing better outcomes for women diagnosed with the disease.

**This study was conducted and the results reported by Yang Yang-Harwich, Marta Gurrea-Soteras, Natalia Sumi, Jennie C. Holmberg, Vinicius Craviero and Gil G. Mor of the Department of Obstetrics and Gynecology, Yale University School of Medicine, New Haven, CT and Won Duk Joo of CHA Bundang Medical Center, CHA University, South Korea. Published 19, August 2014 Scientific Reports.*

Janice P. Marcus, Contributing Editor

Discovery to Cure High School Internship Concludes 12th Summer Program 35 Students Conduct Scientific Research in Yale School of Medicine Laboratories

What better way to inspire scientifically inclined high school students to pursue careers in medicine and scientific research than a summer spent working alongside professionals in the Yale School of Medicine biomedical laboratories? That was the thinking behind Dr. Gil G. Mor's establishment 12 years ago of the Discovery to Cure High School Internship Program. Since then, hundreds of exceptional students between their junior and senior years and at least 16 years of age have been mentored in the annual six-week program created by Dr. Mor, a professor in the Department of Obstetrics, Gynecology and Reproductive Sciences and founder of Discovery to Cure.

Initiated in 2003 with just four students from area high schools and two Department of Reproductive Sciences labs, the Discovery to Cure Internship has grown into a highly competitive program in which only 12% of applicants are accepted. Every year, more than 200 students from secondary schools in Connecticut, the United States and abroad vie for the 25 to 35 available placements in various Yale School of Medicine laboratories. Over the years, a majority of program participants have gone on to follow career paths in medicine and science.

On August 21 & 22 families and friends heard this year's 35 high school interns present the results of their research projects in ceremonies at the Sterling Hall of Medicine's Mary S. Harkness Auditorium. Hailing from as nearby as Hamden High School, Choate Rosemary Hall, Trumbull High School and Westport's Staples High School to as far away as Rothberg High School in Israel and Bay View High School in Pakistan -- the students conducted research studies in a variety of disciplines, ranging from cancer to obesity.

Discovery to Cure Interns Reflect on Their Life-Changing Experience in the DTC High School Internship Program

Francesca (Frankie) Garofalo...2013 DTC Intern

It (the internship) was so different from what I expected! I really had no idea what to expect to be honest, since I had never even seen a lab before. I didn't know that doing experiments and thinking about scientific questions could be so fun. Science is a never-ending and addicting cycle of hypotheses, experiments, results, and more hypotheses.

I think the most important thing I took away from the summer internship as a person, not only as a scientist...is just how critical asking questions can be. Since I was at the internship to learn, I asked so many questions and l learned so much. My research project was looking at a gene called ARF in ovarian cancer. I told my friends all about my experiments, which totally confused them. I'm pretty sure it was (my) code for "I'm loving it."

I knew going into the program that I wanted to go into science, but now I am sure that I want to do translational medicine – research and practice.

Editor's Note: Frankie is now a student at Columbia University, where she is in pre-med.She hopes to apply for acceptance in an M.D./PhD. Program.

Jordan Rubenstein...2014 DTC Intern

The Discovery to Cure internship gave me the invaluable opportunity to function as a scientist and to conduct meaningful medical research with amazing colleagues. I acquired many important skills and techniques – but the real gift was consolidating my ardent interest in becoming a scientist.

While I was very excited to participate, I never expected the experience would have a profound impact on my goals and career path. My research project focused on confirming the effectiveness of a Heat Shock Protein 90 (HSP90) inhibitor as a chemosensitizer. Participating in the program made me want to strive for a career in medicine or cancer research.

I went into the (internship) program with an interest in biology and medicine – but I was not sure I wanted to pursue this path. Participating in the program made me want to strive for a career in medicine or cancer research.

Editor's Note: Jordan is currently a student at the Dalton School. He plans to study biology, physics, computer science, as well as music, in college. He hopes he'll have more opportunities to take part in laboratory research.

Janice P. Marcus, Contributing Editor