The immune system plays an integral role in fighting off disease, including cancer. Cancer cells are able to grow, proliferate and migrate, in part by evading the immune system. Considering that each malignancy is unique, the manner in which they hide from the immune system is unique, as well. Therefore, a multitude of therapies are in development and designed to train the immune system to identify and fight cancer cells.

Mary Crowley Cancer Research Center is currently offering a variety of investigational immunotherapy clinical trials for patients. These trials are classified into 4 categories:

- **Monoclonal Antibodies** are molecules that imitate antibodies found in a patient’s body. These antibodies bind to cancer-specific antigens and induce an immunological response to the cancer cells. Four trials are being conducted at Mary Crowley using monoclonal antibodies.

- **Conjugated Monoclonal** therapies are similar in mechanism to monoclonal antibodies however, they are bound to a chemotherapeutic, toxin or radioactive particle. These antibodies circulate until they attach to the appropriate cancer antigen to deliver the toxic substance. This approach lessens the damage to normal cells as it targets cancer-specific antigens. One conjugated monoclonal therapy trial is currently open to enrollment.

- **Checkpoint Inhibitors** - the immune system has certain checkpoints in place to avoid overstimulation of the immune system on normal cells. Cancer cells hijack these checkpoints to evade the immune system. Checkpoint inhibitors block those checkpoints, allowing the immune system to recognize and destroy the cancer cells. Mary Crowley currently offers two trials testing checkpoint inhibitors.

- **Cancer vaccines** are similar to preventative (commercially available) vaccines, as they are designed with a similar mechanism. The mechanism trains the patient’s own immune system to recognize tumor antigens as foreign objects and flag them for destruction. Mary Crowley has six cancer vaccine trials open to enrollment.

Starting with investigation of immune therapies over 23 years ago, Mary Crowley has a strong track record of clinical cancer immunotherapies. One Mary Crowley patient with advanced melanoma, was given 6 months to live by his oncologist 19 years ago. He received an investigational immune therapy in a Mary Crowley clinical trial, and is still alive today. Although this is an exceptional and rare example, this patient was one of many who have seen responses to immune therapies. For example, Mary Crowley has participated in development of a personalized vaccine, which is currently in Phase II testing and showing clinical promise. Published results to date show statistically significant, median survival of patients who received the vaccine, compared to patients enrolled in the trial who did not receive the vaccine. These results demonstrate the power of the immune system, and the need to study its role in fighting cancer through the testing of immunotherapies in clinical trials.
Maurizio Ghisoli, MD Presents on 1-2 Punch  
On September 3rd, Dr. Maurizio Ghisoli, Pediatric Oncologist and Principle Investigator at Mary Crowley, was the featured presenter at Grand Rounds to 40 students and faculty at UNT Health Science Center, Institute for Cancer Research. Dr. Ghisoli discussed Mary Crowley’s ‘One, Two Punch’ in fighting Ewing’s Sarcoma which includes novel treatment options for Ewing’s patients with high risk or progressive relapsed disease. **Punch one** is a new genetic therapy that is designed to target and silence the *driver gene* in Ewing’s. The second **punch** includes an immunotherapy called FANG™ a personalized vaccine that is currently enrolling patients in a Phase I trial. Both research projects are showing promising results and moving forward to learn more in order to benefit patients. Pictured (left to right) - Dr. Riyaz Basha, Ms. Laura Rutledge, Dr. Maurizio Ghisoli, Dr. W. Paul Bowman, and Dr. Stephen Mathew.

Neil Senzer, MD Presents at Oncology Summit  
Mary Crowley Cancer Research Centers and Gradalis, Inc. were represented by Dr. Neil Senzer, Director of Scientific Research of both organizations, at the 1st Annual Summit on Practical Applications of Immune & Oncolytic Therapies in Oncology. The summit was held in Palm Beach, FL, July 18 -20, 2014. The meeting explored an array of novel, clinically relevant immune therapeutic approaches. Dr. Senzer presented the scientific background of the unique FANG™ vaccine and rationale for its application in the active Mary Crowley Phase II Trial in Ovarian Cancer. The FANG™ vaccine uses an individual patient’s cancer cells that contain a number of abnormal proteins. These proteins can be recognized by the immune system as being different from normal proteins and, consequently, prompt an immune response to fight the cancer.

October: BREAST CANCER AWARENESS MONTH  
The main factors that influence risk for breast cancer include being a woman, being older, and having changes in your breast cancer genes (BRCA1 and BRCA2). However, most women who are diagnosed with breast cancer have no known risk factors and no history of the disease in their families. In the United States:

- More than 200,000 women are diagnosed with breast cancer and more than 40,000 women die from the disease.
- Men are also diagnosed with breast cancer, but it is not very common.
- Most breast cancers are found in women who are 50 years old or older, but 11% of all new cases are found in women younger than 45 years of age.
- African American women have the highest breast cancer death rates of all racial and ethnic groups.
- At this time, there are an estimated 2.8 million breast cancer survivors LIVING in the U.S.

Source: Centers for Disease Control and Prevention/Breast

NEW HEADQUARTERS LOCATION  
The headquarters or central offices of Mary Crowley Cancer Research Centers will be moving to a new location effective Monday, November 24th, 2014. The new address will be 12222 Merit Drive, Suite 1500; Dallas, TX 75251, which is located in close proximity to our patient facility at Medical City Dallas Hospital.
**16TH ANNUAL AEP CHARITY GOLF & SOFTBALL TOURNAMENT**

Few of us understand the full value of the nation’s barge industry but the BARGE INDUSTRY clearly understands the value of advancing cancer research. The barge division of American Electric Power (AEP) selected Mary Crowley as the recipient of their annual Charity Golf and Softball Tournaments held in Eureka, Mo. on August 14-15th, 2014. They were inspired by their BIG HOPE 1 colleagues to join the fight against cancer. After a lot of hard work by many AEP employees, they pulled a heap of money from the event that totaled $46,576!!! This is the second year that AEP has honored Mary Crowley with a gift to benefit the center’s cancer patients. The inland water industry plays a critical role in facilitating the nation’s trade by moving 60 percent of U.S. grain for export and 20 percent of the nation’s coal production. Thank you, AEP for being on-board with BIG HOPE 1 and Mary Crowley.

**NORTH TEXAS GIVING DAY**

For the 6th year in a row, Communities Foundation of Texas hosted the annual “North Texas Giving Day”, an online giving event that provides opportunity for donation and support for area non-profits. This year’s giving day was September 18th from 6:00 AM to Midnight, with over 3,000 participating organizations. Any donation of $25 or more was multiplied with more than $1.5 million in bonus funds and prizes. This year, Mary Crowley was awarded $30,925, which far surpasses the $16,225 that we received last year. The funds raised will directly impact cancer patients through their access to innovative clinical trials, extending survival, and moving one step closer to a cure. Mary Crowley would like to thank the University of Texas at Dallas, the Communities Foundation of Texas, and all donors for this opportunity to raise funding and awareness for cancer research.

**DALLAS FOUNDATION AWARDS GRANT**

Jalonick Family Memorial Fund of the Dallas Foundation awarded Mary Crowley Cancer Research Centers a grant of $22,750.00 for the Blessing Others Benevolence Program at Mary Crowley. This program provides financial assistance to qualified patients in need of an investigational cancer therapy. Three Jalonick Family Memorial Funds were established in 2011, one of which is dedicated to supporting programs that provide medical care and aid to low-income persons who have breast cancer. “A breast cancer diagnosis, and the treatment that follows, is such a difficult time in a person’s life,” said Mary M. Jalonick, president of The Dallas Foundation, “No one should have to worry about finances or medical costs when battling this disease.” The Dallas Foundation is honored to help.” Established in 1929, The Dallas Foundation is Texas’ oldest community foundation. The Dallas Foundation serves as a resource, leader and catalyst for philanthropy by providing donors with a flexible means of making gifts to charitable causes that enhance our community and beyond.

**IT’S UNDY 5000 TIME**

If you are looking for FUN in your Undy, bring it to the 6th annual Dallas UNDY 5000 event on November 8th! The staff, families, and friends of Mary Crowley Cancer Research Centers are totally behind Colon Cancer Alliance’s 5000 5K Walk/Race with team participation. Mary Crowley serves as a Community Health Partner with the organization and is also a beneficiary of the funds raised at the lively event. Join the team by contacting Sherion Taylor staylor@marycrowley.org and help support the Colon Cancer Alliance. To date, Mary Crowley has been the recipient of over $95,000, all of which directly impact patients at Mary Crowley. Bring your boxers and join the ‘Mary Crowley Crawlers’ for this year’s race on November 8th at River Legacy Park in Arlington, TX.
It was in November 2003 when Diane Harvey was diagnosed with triple-negative stage 1 cancer in her left breast. After having surgery, chemotherapy and radiation, she was cancer free until May of 2012 when she was again diagnosed with triple-negative stage 1 cancer in her right breast and underwent a lumpectomy and chemotherapy. Diane’s mother and sister were diagnosed earlier with triple-negative breast cancer. Fearing recurrence, Diane opted for a double mastectomy in January 2013 only to find within a matter of months, that her cancer had progressed to her liver and there was a sizable lump under her arm. Dr. Jario Oliveras, her primary oncologist, referred her to Mary Crowley, where she enrolled in a cancer vaccine trial. However, new tumors appeared in her lung and the tumor under her arm continued to grow. The physician investigators felt that starting another type of immune therapy might maximize her overall immune response. She enrolled in a second clinical trial with a gene-targeted therapy on March 31, 2014, and proved the Investigators right. Her July 2014 scans showed a 28% reduction in tumor size and in late September 2014, a reduction of 40%! “I have never been sick on the medication,” Diane says. She and her husband of 33 years, Oscar, were able to go on the cruise they had been planning. Diane says she can do anything she wants and feels so blessed. Oscar echoed those sentiments when he said, “Our faith in God has been rewarded!”