**Scientific Paper Competition • Winner Abstracts**

**Winner:**
Kacee Hanson, LCCC

Title: *From Radiation Therapy to Radiogenomics*

Abstract: Radiation therapy is a key component in the treatment of cancer. 50% of patients who suffer from cancer receive therapy with 5-10% experiencing increased radiosensitivity. This heightened response has led researchers to associate radiosensitivity with genetic variations. This new area is termed radiogenomics, which is defined as an individual's response to radiation therapy due to genetic variations. With the use of candidate gene and genome wide association studies, research in radiogenomics may help create an individualized treatment plan that may lower the side effects of radiation toxicity and offer a better quality of life for those suffering from cancer.

**Runner Up:**
Kandace Bussell, LCCC

Title: *Advancements in Musculoskeletal Ultrasound: Platelet Rich Plasma Injections*

Abstract: Within the past decade, medical imaging has grown exceedingly. Newer advancements in medical imaging including musculoskeletal ultrasound and the capability to perform injections without using ionizing radiation. In this research, the main injection is platelet rich plasma therapy. With my internet and journal sources, I interviewed radiologist Dr. Winesteen and Dr. Kopeay of Harmony Imaging Center to obtain more information on PRP. This study has been around for a decade, but just recently became popular. There is a sufficient amount of research being done, but I believe this is a breakthrough study in orthopedics and younger athletes.

**Runner Up:**
Megen Medina, LCCC

Title: *Digital Breast Tomosynthesis and its Role in Breast Imaging*

Abstract: In the United States women have a significant chance of being diagnosed with or dying from breast cancer. The most common screening for breast cancer is conventional mammography, but its sensitivity rate is not 100%. This leaves women with false positive or negative readings and unnecessary callbacks which result in additional imaging and dose. Digital Breast Tomosynthesis is a promising new way of detecting breast cancer while reducing these problems. Its three dimensional capabilities allow for complete visualization of the breast eliminating tissue overlap, the main cause of false positives and negatives, decreasing false positive and negative readings and callbacks.