

## **DNA Testing**

Dr. Tim Greiner was the speaker at the Optimist Club meeting on August 22. He talked about his work on DNA testing at the University of Nebraska Medical Center.

The Medical Center contains a variety of laboratories, including Histology (to perform biopsies), cytology (to look at individual cells), chemistry (to look at substances in the blood), hematology (to look at red and white cells in the blood), microbiology (to look at viruses and bugs), the blood bank (to test the blood), and molecular diagnostics (DNA testing). The laboratory for molecular diagnostics, or DNA testing, formally began in 1996. It is a regional lab that performs 28,000 tests per year. This is now the fastest growing area in the hospital. A specific DNA test takes about two hours to perform on specialized equipment. The human genetic code contains 3 billion bases.

The DNA testing lab performs tests for cancer, drug sensitivity, microbiology, genetic diseases, and human identity. Most testing is for microbiology (14,750/year) and human identity (8,200/year, mainly for criminal investigations).

A growing area of DNA testing is to test for specific genes to effectively target therapies, which may save patients time and money. For example, one test checks tumors for a mutation in the gene, KRAS. "If the mutation exists, oncologists know which treatment to use," Greiner said. "This is an evolutionary change in the way we manage cancer. With this test, we can predict how patients' cancers may respond to treatment." Tumors with mutations in the KRAS gene do not respond well to some treatments that have been found effective in some colon cancers.