Early Detection

Growth in finding blood-based biomarkers offers hope, FAU researcher says.

Chemistry and biochemistry professor Gregg Fields brings the personal and the scientific to his work against cancer. All four of his grandparents died of cancer before age 70. His parents and sister are cancer survivors.

Fields’ family moved to Florida from New York when he was in his teens. A graduate of Piper High in Broward, he earned his bachelor’s in chemistry at the University of Florida and a doctorate at Florida State. After a post-doc in California, he helped start a cancer center at the University of Minnesota, joined Florida Atlantic for 11 years, followed by a stint in at the University of Texas Health Science Center at San Antonio. Since 2015, he’s been back at FAU. He’s a fellow in the National Academy of Inventors, holds six patents and developed three products sold by five companies. The National Cancer Institute has been funding his research continuously for nearly 30 years.

Fields is executive director of FAU’s I-Health (Institute for Human Health and Disease Intervention), which combines scientists across different disciplines to advance research and treatment. He’s also co-director of the Memorial Cancer Institute Florida Atlantic University Cancer Center of Excellence.

Fields says one area of optimism in cancer treatment is the growth in finding blood-based biomarkers that allow cancer to be detected early. It’s less invasive and more convenient, allows for early detection and people can self-test. Earlier detection makes surgery and localized treatments more effective. Another optimistic development: Immunotherapies,

Gregg Fields and Ania Knapinska look over fluorescence microscopy results from a patient with a tumor.
which a decade or so ago didn’t seem to be living up to their promise, have become “very effective” for certain patients now that scientists have discovered how to negate the properties that enabled cancer cells to escape detection by the body’s immune system fighters. “These are very promising developments,” he says.

Fields notes that some cancers remain “very difficult to treat,” such as glioblastoma, a cancer of the brain and spinal cord that continues to be “very lethal,” and pancreatic cancer. “The difficulty in pancreatic cancer is it’s usually detected too late,” he says. Also, it once was rare but now “it’s increasing, and it’s increasing among younger people, and we don’t know why,” he says.

With cancers in general, researchers are looking at environmental influences such as obesity, diabetes and inflammation.

Fields’ personal regime is instructive. He watches his weight, leans toward a Mediterranean diet, runs three to four times a week in the 5-kilometer range, cycles a couple times a week and does “not a lot” of strength training.

He has himself checked for the cancers that affected his family. Because melanoma runs in the family, for instance, he sees a dermatologist yearly. “Part of this is understanding family history. Make sure if there’s family history you do something about that.”

— By Mike Vogel