



Teaming up against cancer

When the Florida Legislature described what kind of medical school Florida State would have, it didn't leave much doubt about where the focus would be. On the medical education side, the FSU College of Medicine would focus on developing more primary-care physicians for the state, especially those who would provide care to underserved populations, including rural, urban and older patients.

The legislature also laid out a clear vision for College of Medicine research. Florida Statute 240.2997 reads, in part:

"The College of Medicine shall be dedicated to ... advancing knowledge in the applied biomedical and behavioral sciences, geriatric research, autism, cancer, and chronic diseases."

Key parts of the focus were addressed in the organization of academic departments, with robust research activities to be initiated in the departments of Geriatrics and Behavioral Sciences and Social Medicine. The FSU Autism Institute is considered one of the top programs in the U.S. based on its funding and scholarly activities.

And slightly more than a decade after the medical school's fledgling biomedical research program began, the attention to cancer research is gaining momentum.

In just the past few months, biomedical researchers have published important cancer-related papers in prestigious journals *Cell* and *Proceedings of the National Academy of Sciences*, and have secured new cancer research funding from the National Institutes of Health.

"Our cancer work addresses disease at the molecular level and gives us a foundation for

expanding and directing our efforts to be relevant to many human diseases," said Richard Nowakowski, chair of the Department of Biomedical Sciences.

"With several new scientists joining an already established core of distinguished researchers it's safe to say we've got a diverse and vibrant group of cancer and cell-cycle biologists."

One example is David Meckes, who has already begun to distinguish himself in a young and rapidly

expanding field of research involving exosomes – small vesicles secreted from cells and containing a sophisticated cargo of functional proteins and RNA. It

represents a form of cellular signaling that is being implicated in a variety of diseases.

At the age of 34, Meckes recently secured his first independent NIH grant. Obtained in a difficult funding environment, especially for young scientists, it's an important step in helping

Meckes take his work to the next level of discovery.

"Your proposal ends up being in the hands of a few established scientists who are judging the merits of your work and your ideas," Meckes said. "As important as the funding is, it's even more satisfying to know that it validates what you are doing. It's a signal that you're on the right path."

Meckes focuses on a specific area of cancer, but with the goal that what he is discovering will have applications across a wide realm of human disease. That makes him a good fit for the College of Medicine's attention to disease at the molecular level.

"I think that's one of the great things about this department is the diversity of it," he said. "For example, I never imagined myself working in neuroscience, but I'm in a collaborative project with James Olcese looking at the role exosomes play in Alzheimer's disease."

FACULTY	ARRIVED FSU MED	RESEARCH FOCUS (prior to arriving at the FSU College of Medicine)
Akash Gunjan	2005	DNA damage and repair (Postdoctoral fellow, United Kingdom)
Myra Hurt	2000	Understanding cellular division at the molecular level (Director of Program in Medical Sciences; researcher at Florida State University)
Daniel Kaplan	2012	DNA replication and genome maintenance (Assistant professor, Vanderbilt University)
Yoichi Kato	2004	Molecular mechanism of vertebrate glial development (Research fellow, Harvard Medical School)
Eric Laywell	2011	Brain tumors and tumor progression of human glioblastoma cells (Assistant professor, University of Florida)
David Meckes	2013	Molecular mechanisms of viral oncogenesis (American Cancer Society Postdoctoral Fellow, UNC Cancer Center)
Tim Megraw	2011	Centrosomes, cilia, stem cells, asymmetric cell division and neurodegeneration (Assistant professor, UT Southwestern)
Antonia Nemec	2015	DNA repair and cancer genetics (Postdoctoral research, Yale University School of Medicine)
Richard Nowakowski	2010	Cell proliferation and genetic basis of individual differences in the central nervous system (Professor of neuroscience and cell biology, UMDNJ-Robert Wood Johnson Medical School)
Yi Ren	2013	Molecular cell biology of inflammation and macrophage function in central nervous system trauma (Research professor, Rutgers University)
Raed Rizkallah	2008	Cell cycle regulation (Research faculty, Florida State University)
Robert J. Tomko Jr.	2015	How cells build, maintain and utilize the proteasome in normal and disease states (American Cancer Society Postdoctoral Fellow, Yale University)
Yanchang Wang	2003	Cell cycle regulation and the response to the expression of damaged proteins (Leukemia and Lymphoma Society Special Fellow, Baylor College of Medicine)