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UC San Diego Cancer Researchers Receive NCI Outstanding Investigator Award

Four University of California, San Diego School of Medicine researchers have been selected to receive the newly established National Cancer Institute (NCI) Outstanding Investigator Award. The multi-million dollar awards fund new projects that have an unusual potential in cancer research over seven years.

The recipients are Kun-Liang Guan, PhD, Distinguished Professor in the Department of Pharmacology, who will receive \$5.9 million for his work with mTORC1 and Hippo pathways in cell growth and cancer; Tannishtha Reya, PhD, professor in the Department of Pharmacology and Medicine, who was awarded \$6.3 million for her project on molecular strategies for early detection and targeting of cancer; and Jin Zhang, PhD, professor in the Department of Pharmacology, who will receive \$6.5 million to evaluate live-cell activity architecture in cancer. The funding amount for Michael Karin, PhD, Distinguished Professor of Pharmacology and Pathology, is pending. Karin is studying the role of immunosuppressive B cells in the development of cancer and its treatment.

“Cancer research is moving at an accelerated pace but there are still many unanswered questions that our team is trying to answer through innovative science,” said Scott Lippman, MD, director of Moores Cancer Center at UC San Diego Health. “The NCI Outstanding Investigator Award provides important additional resources that will help us realize scientific discoveries best accomplished at a comprehensive cancer center.”

NCI anticipates funding approximately 60 Outstanding Investigator Awards. The grant program was developed to provide researchers with substantial time and resources to break new ground or extend previous discoveries that advance biomedical, behavioral or clinical cancer research.

“We are exceptionally pleased that the National Cancer Institute has recognized the outstanding talent of our faculty,” said Joan Heller Brown, PhD, Department of Pharmacology chair. “The Outstanding Investigator Award will allow them to focus on developing new ideas and research directions based on their proven track records, without the major interruption

incurred through writing and revising grant applications every few years. Our department has continued to grow in strength in the area of cancer biology and is dedicated to making basic discoveries that will inform the quest for new cancer therapeutics.”

Research summaries:

Guan, a member of Moores Cancer Center, studies the basic mechanisms of cell growth regulation and how alteration of mTORC1 and Hippo pathways control cell growth and tissue/organ homeostasis. mTORC1 is a central cell growth controller which promotes cell growth by stimulating biosynthesis and inhibiting autophagy. The goal is to develop enabling technologies to probe the active molecules in their native environment and characterize how these active molecules change in cancer.

Reya, also a member of Moores Cancer Center, focuses on understanding the mechanisms by which cancers subvert normal developmental and stem cell signals to grow, spread and evade therapy. Over the last decade her work has ranged from the discovery of new signals involved in cancer growth and progression to preclinical work that has formed the basis of clinical trials testing new agents for drug-resistant leukemias.

Zhang, a member of Moores Cancer Center, is developing enabling technologies to probe active molecules in their native environment and characterize how they change in cancer. This research may lead to new ways of studying dysregulated molecular machinery in cancer, thereby better guiding therapeutic interventions that target the dysregulation.

Karin, a member of Moores Cancer Center and the National Academy of Sciences, has been studying the role of pre-existing and tumor-elicited inflammation in cancer development, malignant progression and response to therapy. His work has laid the foundation of the burgeoning inflammation and cancer field and helped establish the critical role played by innate and adaptive immune cells and the cytokines they produce in the pathogenesis of cancer and its treatment.

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