



Kidney Cancer Research Program

Kidney Cancer impacts U.S. Service members, their dependents, and Veterans: Kidney cancer occurs at twice the frequency in men than women. Cigarette smoking, historically more prevalent among Veterans, is the strongest known risk factor for the development of renal cell carcinoma.^{1,2} Other unique occupational exposures that cause kidney cancer, such as ionizing radiation or chemical and/or hazardous materials, can occur during active Service, though the disease may not appear until later in life. This results in Veterans being more frequently affected than their U.S. civilian counterparts. According to a 2014 report by the Centers for Disease Control and Prevention, U.S. Marines and their families stationed at Camp Lejeune, North Carolina, have a 35% higher risk of contracting kidney cancer than civilians due to contaminated drinking water.

VISION

To eliminate kidney cancer through collaboration and discovery

MISSION

To promote rigorous, innovative, high impact research in kidney cancer for the benefit of Service members, Veterans, and the American public



“The creation of the CDMRP Kidney Cancer Research Program is one of the most significant developments in kidney cancer that we’ve

seen in decades. This new research funding has done so much to unite the field and drive research toward a cure. For patients and caregivers, this program represents hope.”

Dena Battle (consumer)

PROGRAM HISTORY

In fiscal year 2017 (FY17), Congress directed \$10 million (M) to kidney cancer research in its Department of Defense (DoD) appropriation, thus establishing the Kidney Cancer Research Program’s (KCRP). Historically, kidney cancer research was funded by the Congressionally Directed Medical Research Program (CDMRP) under different funding programs as directed by Congress (e.g., the Peer Reviewed Medical Research Program and the Peer Reviewed Cancer Research Program [PRCRP]). From FY10 through FY16, the PRCRP invested over \$9.8M in kidney cancer research.

Following the CDMRP program management cycle, the KCRP offered four different funding opportunities in FY17, including the Concept Award, Idea Development Award, Translational Research Partnership Award, and Consortium Development Award. The Concept Award and Idea Development Award are funding mechanisms that are designed to foster innovative research and provide opportunities for early-career investigators. The Translational Research Partnership Award brings together a clinician and a laboratory scientist to study an overarching question in research or patient care through synergistic applied research. Last, the Consortium Development Award focuses on developing the infrastructure to put together a multi-site, multi-investigator, clinical consortium. For FY17, 22 separate awards have been recommended for funding. The following is a brief summary of some of these awards.

HIGH-IMPACT ADVANCES SUPPORTED BY THE KCRP

During the FY18 Vision Setting meeting, the Programmatic Panel laid out a series of overarching goals for the program:

1. Increase understanding of the biology of kidney cancer
2. Improve patient care for kidney cancer
3. Enhance technology development for kidney cancer

Through these overarching goals, the Programmatic Panel hopes to promote impactful research that will help achieve the DoD KCRP mission and reduce the burden of kidney cancer on Service members, Veterans, and the American public.

¹ McLaughlin JK, Hrubec Z, Heineman EF, Blot WJ, Fraumeni JF Jr. (1990). Renal cancer and cigarette smoking in a 26-year followup of U.S. veterans. *Public Health Rep.* 105: 535-537.

² Talcott GW, Cigrang J, Sherrill-Mittleman D, Snyder DK, Baker M, Tatum J, Cassidy D, Sonnek S, Balderrama-Durbin C, Klesges RC, Ebbert JO, Slep AM, Heyman RE. (2013) Tobacco Use During Military Deployment. *Nicotine Tob Res.* doi:10.1093/ntr/nts267

KIDNEY CANCER INVESTMENT

Figure 1 FY17 KCRP Common Scientific Outline Investment in Kidney Cancer

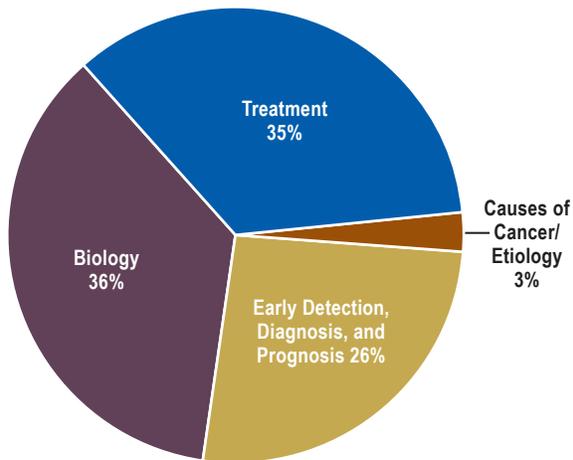
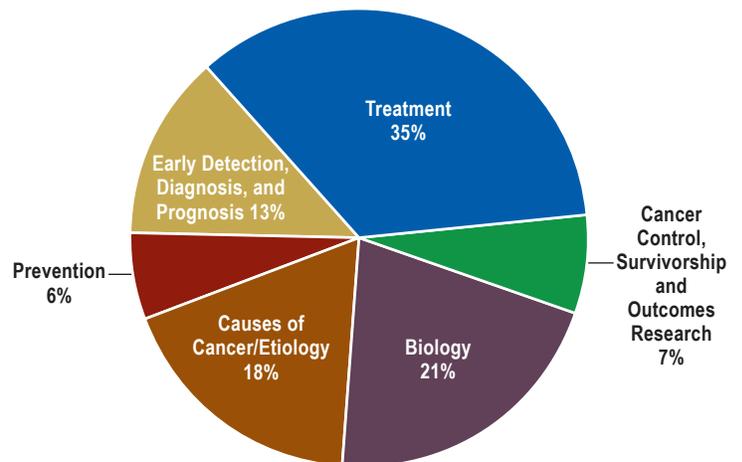


Figure 2 FY14-FY17 National Cancer Institute Common Scientific Outline Investment in Kidney Cancer



ADDITIONAL FUNDING MECHANISMS

CONCEPT AWARD



Paula Bates, Ph.D., of the University of Louisville, plans to study the use of nanoparticle-based drugs to manipulate the immune response, converting pro-tumor immune cells to anti-tumor immune cells. With this novel model system, Dr. Bates and her team hope to bring new, durable, clinical immunotherapy to patients with metastatic renal cell carcinoma.

IDEA DEVELOPMENT AWARD (ESTABLISHED INVESTIGATOR)



Leif Oxburgh, Ph.D., of the Maine Medical Center, will study the effects of stroma on kidney cancer, specifically clear cell renal cell carcinoma. The stroma is the collection of cells surrounding tumor cells and includes fibroblasts, endothelial cells, and inflammatory cells. In this study, Dr. Oxburgh's team will develop an assay that mimics the extracellular matrix scaffolding to determine the complex interactions and influences that tumor-associated fibroblasts have on tumor aggressiveness.

TRANSLATIONAL RESEARCH PARTNERSHIP AWARD



Michael Atkins, M.D., of Georgetown University, and **Catherine Wu, M.D.**, of the Dana Farber Cancer Institute, will utilize the power of analyzing individual cells from patient tumor specimens to define how the characteristics of tumor and immune cells evolve during treatment. Using this information, they expect to develop biomarkers for predicting kidney cancer patient outcomes and rationally choosing therapies for future patients.

CONSORTIUM DEVELOPMENT AWARD



Eric Jonasch, M.D., of the MD Anderson Cancer Center, along with his collaborators, **Moshe Ornstein, M.D.**, of the Cleveland Clinic Foundation; **David McDermott, M.D.**, of Harvard Medical School; and **Hans Hammers, M.D.**, of the University of Texas Southwestern, proposed creating a multi-center clinical trials coalition that will utilize a standardized process for efficient protocol approval, clinical and data monitoring, data management platforms, and sample analysis procedures. Additionally, the team expects to forge industry partnerships for long-term continuity of the consortium. The goal of the consortium is to bring together leaders in kidney cancer research and patient care to accelerate clinical translation of outcomes and treatment options for patients with kidney cancer.

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