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PROSTATE CANCER FOUNDATION FUNDS $1.0 MILLION IN NEW CREATIVITY AWARDS FOR ADVANCED RESEARCH

Initial Funding Gives Boost to 10 Innovative Projects to Accelerate Advances Against Prostate Cancer

SANTA MONICA, CA/April 6, 2009—The Prostate Cancer Foundation (PCF) today announced that it has funded ten Creativity Awards for advanced prostate cancer research. These one-year awards are designed to support innovative ideas that have the potential to achieve breakthroughs for the detection and treatment of prostate cancer. PCF Creativity Awards aid the advancement of the world's most imaginative, new research ideas that are not currently funded by any existing government or private sources.

The funded projects represent a range of research areas including biomarkers for earlier and more precise detection and treatment, to the development of new, nano-enabled therapeutics for metastases, to mapping areas of DNA where transcription factors initiate up to 60 percent of prostate cancers.

"We were impressed with the unique ideas represented by the applications we received. A rigorous peer review process vetted the ten selected projects from a field of more than 300 applications representing 105 institutions in 11 countries," outlined Howard Soule, PhD, executive vice president and chief scientist for the PCF. "These awards feed our pipeline of compelling ideas to cultivate new solutions for the prostate cancer problem. Promising results will translate into better therapies for patients with advanced prostate cancer."

Historically, 70 percent of such PCF awards have gone on to attract additional multi-year funding from the PCF and other sources.

"The PCF is very excited to have identified these programs for funding," added Dr. Soule. "They have solid potential to deliver breakthrough discoveries.

2009 Creativity Award Recipients (♦ = First-time PCF Award Recipient)

THE GORDON BECKER CREATIVITY AWARD

♦Cory Abate-Shen, PhD - Columbia University Medical Center

A Novel Human-to-Mouse-to-Human Approach for the Elucidation of Prostate Cancer Pathways and Druggable Targets—Identifying In-Common Human and Mouse Molecules May Eliminate Traditional Limitations of Animal Models and Speed New Drug Intervention

This project will compare all dysfunctional regulatory and signaling molecules in common between mouse and man. It is thought that these molecules will represent a set of "druggable" targets. Unlike typical drug discovery processes, where animal models are marginally relevant to human biology, common lesions between man and mouse prostate

cancer will be fully amenable to animal model testing. This creative project promises to generate new targets for therapeutic intervention in prostate cancer.

THE CHARLIE WILSON CREATIVITY AWARD

♦Adam Dicker, MD, PhD, Karen Knudsen, PhD - Thomas Jefferson University

Self-Seeding and Radiation Therapy: A New Strategy Against Metastatic Prostate Cancer —Preventing Circulating Prostate Cancer Cells from "Re-Seeding" in the Prostate May Change Behavior of Metastatic Cells

The mechanism by which prostate cancer metastasizes is not fully understood. The decades-old theory is that prostate cancer cells (the seed) leave the prostate, enter circulation, and invade an environment conducive to growth (the soil) such as lymph nodes and bone. Drs. Dicker and Knudsen propose to test a new theory of metastasis called self seeding where circulating tumor cells leave distant sites and return to their most desired environment, the prostate where they are "re-energized" and sent back to circulation to further disseminate. This project will test the possibility that radiation therapy to an intraprostatic tumor in mice will change the growth behavior of a distant metastasis by destroying the conditioning provided by the prostate. If successful, this concept will be rapidly translated to the clinic as an anti-metastasis therapeutic strategy.

THE MICHAEL VINECKI CREATIVITY AWARD

♦Shelton Earp, MD - University of North Carolina

Application of Nanotechnology to Novel Models of Prostate Cancer—Nanoscale Fabrication Technology May Provide New Modeling Capabilities and Therapies to Arrest Lethal PCa Progression

This program has discovered that a molecule named Ack1 can cause poorly-tumorigenic prostate cancer cells to become highly lethal. In addition it has developed an innovative nanoparticle drug delivery technology using the same stepped layering and etch process used in the fabrication of today's nanoscale semiconductors and microprocessors. Inhibitors of Ack1 will be delivered to novel models of prostate cancer to credential the

Ack1 target for discovery of new therapies for prostate cancer. Ultimately, it is hoped that Ack1 inhibitors would be able to turn off the lethal progression of prostate cancer cells.

♦Barbara Graves, PhD - University of Utah

ETS Protein Targets in Prostate Cancer—Understanding Gene Activity that Likely Causes Up to 60 Percent of Prostate Cancer Can Open Door to New Drug Development

Over-expression of Ets genes, due to genetic translocations that drive the expression of tumor promoting molecules, are the likely cause of over 40-60% of prostate cancer cases. Dr. Graves proposes to map the DNA regions that bind Ets proteins which will in turn help to define the downstream cancer causing factors. This proposal intends to employ state-of-the-art molecular biology biotechnologies. These studies represent the first step in discovering new medicines that could interrupt carcinogenesis of the prostate and progression of prostate cancer.

David Heber, MD, PhD - UCLA

Development of an Ex Vivo Bioassay to Examine Modulation of PSA-Positive Macrophage Invasiveness and Inflammatory Activities in Prostate Cancer Patients with Abdominal Obesity—The Identification New Biomarkers May Be Able to Assess the Effectiveness of Diet and Lifestyle Changes

Macrophages are specialized white blood cells that scavenge invading microbes and dead cellular material. They are also involved in inflammation, angiogenesis, and metastasis. Accumulated abdominal fat and metabolic syndrome, two common findings in prostate cancer patients, activates macrophages. However, this activity is reversible with diet and lifestyle changes. This creative project proposes to study prostate-cancer-associated macrophages both in the lab and in patients. These cancer-associated macrophages will be tested as a progression biomarker for successful alterations in lifestyle and might represent the first meaningful endpoint for pharmacological intervention.

Towia Libermann, PhD, Alan Rigby, PhD – Beth Israel Deaconess Medical Center

Development and Validation of Selective Small Molecule Ets Factor Inhibitors for Prostate Cancer—*Understanding Gene Activity that Likely Causes Up to 60 Percent of Prostate Cancer Can Open Door to New Drug Development—Another Approach*

The genetic alteration present in 40-60% of prostate cancer cases give rise to expression of Ets factors that drive the initiation and progression of prostate cancer. Identification of the Ets factor binding sites on DNA is the first step in selecting candidate inhibitors of the highly carcinogenic event. Unlike Proposal #1 by Dr. Barbara Graves, where advanced molecular biology biotechnologies will be used to identify these sites, Drs. Libermann and Rigby will use state-of-the-art computer-aided drug design methods to model the structure of these sites. In fact, this work has already identified a series of candidate lead compounds that block Ets binding to DNA. If successful, this work will generate drug candidates to block prostate cancer progression.

THE DAN FOGELBERG CREATIVITY AWARD

David Nanus, MD - Weill Cornell Medical College

PSMA-based Microfluidics-Capture of Circulating Prostate Cancer Cells: Study of Microtubule-driven Androgen Receptor Signaling, Gene Fusion, and Gene Expression Profiles with Correlation to Clinical Response to Taxane Therapy—New Capture Technology for Circulating Tumor Cells Supported by PCF-Funding May Prove Useful in Identifying Patients Most Likely to Benefit from Taxotere.

This project combines, for the first time, an advanced system to capture circulating prostate cancer cells from whole blood with the discovery of a biomarker that may predict sensitivity to Taxotere, as well as other anti-prostate medicines. While clinical investigations have already shown that Taxotere prolongs survival for advanced prostate cancer patients, this new technology could predict which individuals are most likely to respond to this therapy while sparing many from unnecessary side effects.

♦Pier Paolo Pandolfi, MD, PhD - Beth Israel Deaconess Medical Center

Pro-Senescence Therapy for Cancer: A Novel Approach Towards Prostate Cancer Prevention and Cure—Identifying New Druggable Targets May Enable Scientists to Lull Prostate Cancer Cells to Sleep

Cellular senescence is a process whereby a cancer cell essentially "goes to sleep". Dr. Pandolfi has discovered several druggable cellular signaling "nodes" that act together to cause a heretofore unknown form of senescence in prostate cancer cells. He believes that this process is also operative in the very difficult to eradicate cancer stem cell population. Chemical compounds against these targets that will drive prostate cancer cells into a state of senescence will be evaluated in specialized animal models of prostate cancer with the goal of clinical translation.

THE ARNIE'S ARMY CREATIVITY AWARD

♦Muneesh Tewari, MD, PhD - Fred Hutchinson Cancer Research Center

Exosomal RNAs as serum prostate cancer biomarkers—Personalized Treatment and Better Prognostic Indicators May Become Reality Through MicroRNA Tumor Profiling

MicroRNAs, small RNA molecules that regulate gene expression, have been found to circulate in blood within lipid membrane-encased particles (exosomes) that are secreted from and blebbed off of cancer cells. These molecules appear to be cancer-specific and hold great promise for molecular profiling of tumors. This project is on the cutting edge of a new technology whereby diagnosis, prognosis and optimal treatment strategy might be determined by analysis of circulating microRNAs. Dr. Tewari will optimize the isolation of exosomes and purification of microRNAs from prostate cancer models followed by genetic probing of these materials. This technology may ultimately be useful to patients for personalized treatment and improved prognostic information.

♦John F. Ward, MD – The University of Texas M. D. Anderson Cancer Center

Noninvasive Radiofrequency Field for the Targeted Destruction of Prostate Cancer Using Directed Gold Nanoparticles—Activated Gold Particles Could Provide Novel Means of Destroying Tumors

This project combines cutting-edge nanotechnology with high-tech radio frequency energy to heat prostate cancer cells to death. Gold nanoparticles will be targeted to prostate cancer and injected intravenously to seek all sites of metastasis. Harmless penetrating radio frequency will heat the particles localized in tumor sites thereby only killing the malignancy with little destruction of non-targeted cells. Studies will first employ model systems with a goal of entering the clinic in about three years.

About the Prostate Cancer Foundation

The Prostate Cancer Foundation is the world's largest philanthropic source of support for prostate cancer research focused on discovering better treatments and a cure for recurrent prostate cancer. Founded in 1993, the PCF has raised nearly $370 million and provided funding to more than 1,500 research projects at nearly 200 institutions worldwide. The PCF also advocates for greater awareness of prostate cancer and more governmental research funds. PCF advocacy has helped produce a 20-fold increase in government funding for prostate cancer since 1994. More information about prostate cancer and the PCF can be found at www.pcf.org.

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