



*Health Sciences and Medical Affairs
News and Community Relations*

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FOR IMMEDIATE RELEASE:

Collaborators receive \$10.5 million to explore progression and treatment of prostate cancer

Funding spotlights Seattle as major center of prostate research

The National Cancer Institute will provide \$10.5 million in funding to the University of Washington (UW), the Fred Hutchinson Cancer Research Center (FHCRC) and the Institute for Systems Biology (ISB) over five years for study of the progression and treatment of prostate cancer. The research will include intensive study of genes and proteins that make prostate cancer cells virulent and stimulate their deadly march into human bone.

The project grant is called Mechanisms and Markers of Prostate Cancer Metastases.

“UW brings a strong track record to the table with its past research – and we will also draw upon the strength of the partnership with our collaborators. The program project grant is further evidence that Seattle has become a major center of prostate research,” said Dr. Paul Lange, principal investigator. Lange is professor and chair of the UW Department of Urology and himself a prostate cancer survivor.

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Prostate cancer is the No. 1 cancer to strike men, and the second leading cause of cancer death (after lung cancer) among men. One out of every six men can expect to develop prostate cancer.

The grant includes \$5.5 million for the UW, \$2.7 million for the FHCRC and \$2.3 million for the ISB.

“For a decade, the UW and the FHCRC have been building a world-class prostate treatment and research center. In this collaboration with Lee Hood and his colleagues at the Institute for Systems Biology, we envision even greater capacity to make substantial advances,” Lange said.

Researchers will examine how to identify the genes responsible for prostate cancer. Researchers say they can use new tools from bone and cancer biology, cancer endocrinology, biochemistry and genomics to study the mechanisms of prostate cancer growth.

The reason this question is important is that while most prostate cancer can be treated with local therapy, the cancer sometimes spreads and foils the treatment plan. Researchers would like to know how the cancer is accomplishing this. At the UW, previous studies have determined that many men, even those who are subsequently cured with local therapy, appear to have prostate cancer cells in their blood and bone marrow very early in the disease process. It is not known why some of these cells turn into deadly metastatic cancer, while others remain dormant or die.

In 2003, the UW will move its urology and prostate treatment center into new quarters at the UW Medical Center Surgery Pavilion, now under construction. The UW and the FHCRC recently launched a joint fund-raising campaign to establish the Prostate Cancer Research Institute, which will include researchers from both institutions. Through the new institute, the UW and FHCRC will work together to accelerate the search for a cure for this disease.

Details about the grant and projects begin on the next page.

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Backgrounder

National Cancer Institute Program Project Grant:

Mechanisms and Markers of Prostate Cancer Metastases

Amounts (total \$10.5 million)

- ◆ University of Washington: \$5.5 million
- ◆ Fred Hutchinson Cancer Research Center: \$2.7 million
- ◆ Institute for Systems Biology: \$2.3 million

Projects

Project 1: New Molecular Markers of Progressive Disease

Project manager: Dr. Leroy Hood, co-founder and president, Institute for Systems Biology, and UW affiliate professor of bioengineering, immunology, and computer science and engineering.

Researchers in Seattle already have a large collection of prostate cancer cells, including cell lines that vary by low, intermediate or high virulence. The researchers have already analyzed genes involved in the progression of prostate cancer. In this part of the program project grant, researchers will continue their search for genes that could be diagnostic markers and therapeutic targets. They hope to identify at least 12 “genes of interest” each year for further study.

Project 2: Prostate cancer growth in bone

Project managers: Dr. Eva Corey, research assistant professor, UW Department of Urology and Dr. Robert Vessella, professor, UW Department of Urology

Prostate researchers want to know why prostate cancer spreads into the bones of some people, but not others. They also want to know why cancer spreads into the bone at different rates for different people. Researchers suspect that in certain circumstances, prostate cancer cells secrete proteins that disturb the bone and contribute to further cancer growth.

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It can be very difficult to get appropriate bone samples for study. This grant will expand a program in which staff respond within two hours of a donors' death, for a 'rapid autopsy' to obtain bone tissue samples that can be used for the study.

Project 3: Novel prostate proteases

Project director: Dr. Peter Nelson, associate member of the Human Biology and Clinical Research divisions at the Fred Hutchinson Cancer Research Center and affiliate faculty member at UW in medicine, genome sciences and pathology.

The project involves study of the proteases involved in prostate cancer. Proteases are proteins involved in activating or inactivating other proteins. This project will determine the role of prostate proteases produced at high levels by prostate cancer cells. It is thought that the expression of these proteases in metastatic sites may contribute to the growth and progression of prostate cancer. Blocking the activity of these proteases could represent a therapeutic strategy for treating or preventing advanced disease.

Project 4: Androgen-independence and growth factors in progression of cancer.

Project manager: Dr. Stephen R. Plymate, research professor of medicine, UW.

This project involves a study of the relationship between hormones and prostate cancer. Scientists already know that there is some relationship. Some men with prostate cancer are treated by lowering their testosterone level, which starves the cancer for fuel. However, some prostate cancers are able to find replacement hormones within the human body, besides testosterone, to grow. Researchers want to know why and how this happens, and why and how it happens in some men and not others.

Other information:

Each of the projects will contribute information and resources to the other projects. "The total effort will be greater than the sum of its parts," Lange says.

Program support: The grant also earmarks money in three study cores for animal model studies of prostate cancer and tissue acquisition, expenses related to the conduct of molecular biotechnology, and administrative costs.

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