

## FACULTY MEMBERS

### NORMAN M. GREENBERG, PH.D.

- ⊙ Member, Clinical Research Division, Fred Hutchinson Cancer Research Center
- ⊙ Affiliate Professor of Pharmacology, University of Washington

### SCIENTIFIC RESEARCH

- ⊙ Dr. Greenberg is an expert at using genetically engineered mouse (GEM) models to study the molecular mechanisms involved in prostate-cancer development and progression. His laboratory specializes in developing mice that can be used to study prostate cancer as well as design and test new tools for preventing, diagnosing and treating the disease.
- ⊙ As a postdoctoral fellow, Dr. Greenberg developed a strain of mice called the TRAMP (Transgenic Adenocarcinoma of the Mouse Prostate) model. Because TRAMP mice develop prostate cancer in a way that closely mimics the human disease, they have become an invaluable tool for investigators around the world studying how prostate tumors arise from healthy cells. Dr. Greenberg obtained a United States patent for the TRAMP model in 1999.
- ⊙ TRAMP mice help reveal which genes, proteins and environmental factors may cause prostate cancer. They also serve as a reliable system for testing treatment or prevention strategies before they are tested with patients. Several of the drugs that showed promise in pre-clinical studies in TRAMP have also demonstrated potential for treating prostate cancer in human clinical trials.
- ⊙ Dr. Greenberg has developed a system called MyMouseHouse™ that helps investigators manage their genetically engineered mice. The tool also enables investigators to share resources and data, which can promote collaboration and speed the pace of discovery.
- ⊙ Dr. Greenberg recently participated in a collaborative study that found strong evidence for the existence of prostate-cancer stem cells, which may act as “sleeper” cells in tumors. While hormone-deprivation therapy, commonly used to treat prostate cancer, kills most of the original tumor cells, Dr. Greenberg’s team proposes that the prostate-cancer stem cells survive to generate new, more aggressive, drug-resistant tumors. The findings open the door to the development of new drugs that could improve survival rates for men with therapy-resistant tumors.
- ⊙ Dr. Greenberg is one of the founding investigators of the National Cancer Institute’s Mouse Models for Human Cancer Consortium. As one of only 25 principal investigators in the program, he leads an international team of investigators to develop new mouse models for prostate-cancer research.



### BACKGROUND

- ⊙ Dr. Greenberg graduated from the University of British Columbia in 1988 with a Ph.D. in microbiology. Before joining the faculty of the Hutchinson Center in 2004, Dr. Greenberg spent 16 years in the Department of Molecular and Cellular Biology and Scott Department of Urology at Baylor College of Medicine in Houston, Texas.
- ⊙ Dr. Greenberg has received research awards from the Natural Sciences and Engineering Research Council of Canada, the prestigious Shannon Award from the National Institutes of Health and eight consecutive Prostate Cancer Foundation awards (formerly called CaPCURE).

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