

Foundation Update Fall 2006

Highlights from the latest developments at the Gerald P. Murphy Cancer Foundation:

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Headline News

Murphy article featured in December issue of *Scientific American!* “Studies of pet dogs with cancer can offer unique help in the fight against human malignancies while improving care for man’s best friend”. So says “Cancer Clues from Pet Dogs”, our feature article in this month’s issue of *Scientific American* (www.scientificamerican.com). The article co-authored by Dr. Waters and science writer Kathleen Wildasin takes readers on a skillfully guided tour of the field of comparative oncology and shows just how these scientists approach the challenges – and opportunities – facing cancer researchers today. Finding better treatments, deciding which doses of medicines work best, identifying environmental factors that trigger cancer development, understanding why some individuals are resistant to cancer, and taking aim at cancer prevention – **these are the issues that are on the minds of comparative oncologists**. *Scientific American*, a monthly science magazine that has delighted the public for decades, publishes articles that are scientifically provocative yet accessible to non-experts. With the publication of this article in *Scientific American*, the Murphy Foundation will be recognized for not just spreading the word but for leading a much needed cancer research approach that directly complements today’s best research. It delivers an important message to the public and the scientific community: “If we are going to beat cancer, we need a new path to progress. The intriguing similarities between the cancers of people and pets – once a mere curiosity – are now being systematically applied to transform cancer from killer to survivable nuisance. Comparative oncologists ... are putting our canine companions on the trail of a killer in ways that can save both pets and people”. The article is a knock-out punch scored by scientists at the Murphy Foundation – the **heavyweight champions** of fresh thinking when it comes to solving the cancer problem.

Updates

A new blood test to stratify cancer risk is moving closer to human trials. Our work over the last 7 years in dogs has led us to an important discovery – a simple blood test that can predict the amount of genetic damage within the aging prostate. The test measures an individual’s inherent sensitivity to oxidative stress – the same type of oxidative stress that contributes to aging and cancer development. And now we are poised to see whether this non-invasive blood test (not something invasive like a prostate biopsy) can stratify men into low, medium, and high risk for the development of prostate cancer. Imagine the possibilities – if successful, we should be able to walk into a room full of young men and with a simple blood test tell each one of them if they are at low or high risk of developing prostate cancer as they grow older. Our inability to make this discrimination is recognized by scientists as the most serious obstacle to making rapid progress in finding the best way to prevent prostate cancer. Being able to accurately stratify men according to their risk will **revolutionize the field of prostate cancer prevention** and impact the lives of the more than 200,000 men who are diagnosed with prostate cancer each year in the US. The Foundation has now begun to design a 4-month **pilot study** of 60 men living in Indiana, which will generate the data needed to move the test closer to a large human trial, like the SELECT prostate cancer prevention trial.

2 Steps Ahead™ celebrates the launch of the SeleniumHealth™ test. On April 4, 2006, the first test that enables people to measure their dietary intake of the cancer-preventing nutrient selenium became commercially available. The test called **SeleniumHealth™** is made possible by a scientific discovery made by the Murphy Foundation and licensed to Bostwick Laboratories of Richmond, Virginia. Using the test, men can receive nutritional guidance in order to titrate their daily selenium intake to minimize their risk for prostate cancer. The breakthrough test is the product of the Foundation’s **2 Steps Ahead™** Cancer Prevention Research Program. If you are interested in finding out more about the test, contact us at seleniumhealth@gpmcf.org.

Dr. Waters takes the lead in the biology of aging. Because most cancers develop in old tissues, scientists at the Murphy Foundation see the intersection of the fields of cancer and aging research as the best place to be to spawn fresh ideas about how to prevent cancer. In January 2006, Dr. Waters was one of 85 scientists invited to participate in the **Gordon Research Conference on the Biology of Aging** in Ventura, CA. Dr. Waters presented a poster entitled “A New PATH to Progress®: Unleashing the Pet Dog Population as a New Resource to Study Aging and Cancer”. At the meeting, Dr. Waters was selected as **chairman** of an upcoming symposium on the biology of aging to be held at the 2007 Gerontology Society of America Meeting, the world’s largest meeting of scientists and clinicians interested in aging.

The Murphy Foundation is funded for DVM training in gerontology. The Foundation has secured \$50,000 in funding to **establish the first Gerontology Training Program for DVMs**. Participants will receive a certificate from The Purdue Center on Aging and the Life Course for completing the 3-day course, which is taught by Dr. Waters and 5 other interdisciplinary faculty. The training program participants represent a special group of DVMs who are part of a nationwide network of veterinarians that the Foundation is building to conduct pet dog studies on cancer prevention, cancer treatment, and aging (PATH to Progress®). The Foundation believes that by **crosstraining** individuals in comparative medicine and aging it is making a wise investment in the next generation of scientists who will tackle cancer’s thorniest issues.

Shorts

Taking it on the road – Pipeline to the Public. When it comes to health-related news, are you hearing the real story? Unfortunately, in most cases the answer is “no”. You hear partial truths out of context that may or *may not be relevant to your own health*. To address this problem, the Murphy Foundation has launched a series of **town meetings** called “Health Matters” in Rockville, Indiana. These gatherings provide residents of this small town in Parke County an opportunity to hear the real story about recent health research and to learn to become more savvy consumers of health-related news. These town meetings are a part of **Pipeline to the Public**, the Foundation’s program that focuses on improving the process of communicating health-related news to the public.

Murphy Foundation reports research on male hormones and brain aging. In October 2006, Murphy scientists traveled to Shanghai, China to report their recent findings on the role of male hormones in brain aging. Dr. Shuren Shen’s abstract entitled “Evidence that Androgens Contribute to Steady State Levels of DNA Damage in the Aging Brain” was selected from nearly 400 submitted abstracts as a podium presentation in the final plenary session of The Second Asia-Pacific Forum on Andrology. This international symposium, which focused on scientific advances in male hormone research, was attended by more than 500 scientists, physicians, and trainees from 26 countries. Dr. Shen’s research has shown that androgens – **the same male hormones that drive the development of prostate cancer** – may also contribute to the accumulation of **DNA damage in the aging brain**. The research raises the possibility that androgen suppression may not only benefit the prostate of older men, but may also benefit the brain as well.

The Murphy Foundation’s Gallery Club offers a walk on our wild side. New members from every corner of the globe continue to join the **Gallery Club** – a group of individuals whose gift of \$100 or more provides support to establish and maintain the Gallery honoring the past and present accomplishments of the Murphy Foundation. A visual display as dramatic as it is artistic allows visitors to our West Lafayette headquarters to walk through history as the scientific advancements of our Foundation illustrate how the **wildest dreams of our researchers come to fruition**. Today, we are proud to boast a total of 89 Gallery Club members, representing 18 states and 7 countries around the world.

Kudos

Waters and Einstein – is there a connection? Who got Einstein’s office? We are not really sure but Dr. Waters has the opportunity to find out when he travels to Princeton next spring. Dr. Waters has been **invited to deliver a lecture** on the comparative aspects of prostate and bone cancer at the **Institute for Advanced Studies** in Princeton, New Jersey. Established in 1930, the Institute is an internationally famous “think tank” boasting some of the world’s greatest thinkers as members of its faculty, such as Albert Einstein, John von Neumann, Robert Oppenheimer, and Freeman Dyson to name a few. The invitation is a real honor and a clear indication that the Foundation is making outstanding scientific contributions in the **fight against cancer**.

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