

The Hour

COMMUNITY

SpinOdyssey dollars at work

Committee visits with cancer-fighting researcher at MIT lab

NORWALK

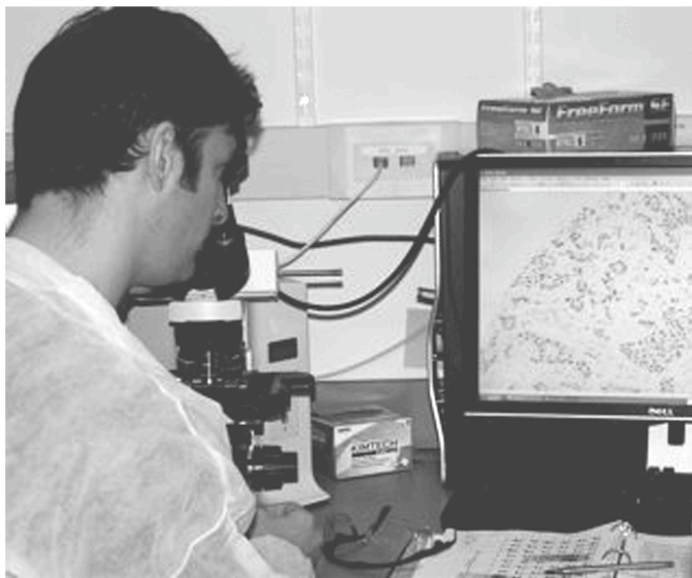
Marc Mendillo, a biologist and researcher at the Massachusetts Institute of Technology, was one of the 2009 recipients of Spin-Odyssey funding for breast cancer research.

Over the past 10 years, SpinOdyssey has raised more than \$2 million and funded 15 researchers in the advancement of treatment and searching for a cure for breast cancer.

Members of the SpinOdyssey committee recently visited with Mendillo at the Whitehead Institute at MIT to learn about his research, which studies the role of heat shock response in cancer.

He emphasized that in his research that he really hoped to "touch on something that could make a difference sooner vs. later." His research is focused on the role of the heat shock response in tumor initiation and progression. The heat shock response is an evolutionarily conserved mechanism which functions to protect cells and was named after its initial characterization in responding to temperature stress but has since been found to protect cells.

Tumor cells, as they grow and evolve throughout tumorigenesis, have to deal with numerous stresses, Mendillo said, adding that an example of this can be seen when one considers the experience of colon cancer cells that metastasize to the liver. Not only do they need to endure the cellu-



Contributed photos
Above, Dr. Marc Mendillo shows breast cancer tumor cells where HSF1 is activated. Taking a break during the committee's visit are, at right, front row, Gayle Alswanger, Lory Wasserman, and, from left, back row, John Dugdale, Herb Wexler, Donna Thompson, Dr. Marc Mendillo, Patty Kondub and Barry Ficken.



lar stresses resulting from their unchecked growth and abnormal metabolism, but they also need to survive their journey to the liver as well as adapt to and proliferate in the foreign microenvironment of the liver, he said.

The heat shock response is controlled by the HSF1 (Heat Shock Factor 1) protein. Colleagues in the laboratory of Susan Lindquist, where Mendillo is under-

taking the project, previously demonstrated that HSF1-deficient mice are extremely resistant to tumorigenesis. They also found that many human cancer cell lines, including several breast cancer cell lines, need HSF1 to survive. HSF1 functions as a transcription factor - which is a protein that is capable of binding regions on DNA that encode other genes (sometimes hundreds or even thousands) and

regulating their output. To understand the nature of HSF1 function in cancer cells, Mendillo believes the first step is to identify the genes it is controlling. So far, he has found that HSF1 controls hundreds of genes in breast cancer cells, some of which are common to the response of other stresses, and others which are seemingly unique to the function of HSF1 in cancer cells. This particular group of

genes is collectively known as "HSF1 signature genes." He is working on defining which of these genes are most important in enabling tumor cell survival.

The lab is involved in an effort to generate inhibitors of the heat shock response that might be used as anti-cancer agents. Emphasizing that his research is still in its preliminary stage, Mendillo believes his effort may help to define which types of cancers will be most responsive. He also said that the results of the study could help understand many other diseases as well.

He said that he is extremely grateful to SpinOdyssey for the funding, which allows him to focus on these important questions which could help improve the treatment for breast cancer and help ensure there are many, many more breast cancer survivors.

SpinOdyssey is 100 percent volunteer-run by people who are breast cancer survivors, indoor cycling and fitness instructors and students, and families and friends.

The next indoor Spinning®, Tennis, ZUMBA and Fitness event is planned for March 7, at the Intensity Fitness & Tennis Club in Norwalk, which is co-owned by Clair Mason and Mike Marcus of Westport.

For more information, log on to www.spinodyssey.org or call Patty Kondub, SpinOdyssey chairman at (203) 362-5231.