

Teacher describes Cancer Research

Jay Dubner's Summer Research Program for Science Teachers at Columbia University has brought 216 high school teachers in for two summers of research in 18 years, so they can "practice what they teach." One of these teachers, Michelle Seeley, chemistry and science research teacher at Elmont Memorial High School, spoke about her research, "Faux Estrogens Fighting the Battle Against Breast Cancer," done with Dr. Hari Bhat, to the Scientific Literacy Seminar at Columbia University on 14 November 2006.

The chance of contracting breast cancer is one in seven, Seeley began. Breast cancer has been linked to estrogen, she went on, to the point that hormone replacement therapy tests were recently halted. Another contributing factor is oxidative stress. Estrogen can be metabolized through either of two genes, Seeley pointed out, one leading to a path characterized by oxidative stress. The "good gene" is called Cyp1A1, and the "bad gene" is called Cyp1B1.

Asian women, Seeley noted, with a diet heavy in soy, have lower breast cancer incidence, but this incidence rate becomes the same as that for Western women when they eat a Western diet. The soy is believed to make the difference – and soy products contain phytoestrogens. It was hypothesized that they modulate estrogen metabolism and thereby estrogen carcinogenesis. The tentative conclusion reached from Seeley's research is that phytoestrogens stimulate the expression of estrogen-metabolizing genes and are potentially protective compounds. But she cautioned that there is no reason to "just run out and buy soy products."