OVERVIEW
Cancer remains the second most common cause of death in the United States. It is currently estimated that one of every two American men and one of every three American women will be diagnosed with cancer during their lifetime. In Connecticut, approximately 20,000 people are diagnosed with cancer each year. Since age is an important risk factor for many common cancers, we can expect the burden of cancer to increase and further tax our health care systems as our population ages.

It has been recognized for many years that cancer risk is determined by the interaction of lifestyle factors and genetics. Identifying lifestyle factors such as tobacco use that contribute to cancer and intervening appropriately has been proven to significantly impact the burden of cancer on society. However, for many cancers the causes have remained unclear. The Yale Cancer Prevention and Control Program strives to conduct cutting-edge research to identify the causes of human cancers. Using behavioral and other approaches, these findings are then translated into public health interventions to reduce cancer incidence and mortality. Yale is home to the only National Cancer Institute (NCI)-designated comprehensive cancer center in the State of Connecticut. Our mandate is to lower cancer rates throughout our state. The Center’s work has been greatly facilitated by key partnerships throughout the State that have been maintained for nearly three decades. Connecticut is thus a “population laboratory” for cancer prevention research, where discovery, implementation, and evaluation are occurring simultaneously.

THE CHALLENGE
Incidence rates for many cancers are declining. For example, lung cancers are declining due to successful tobacco control interventions. However, incidence rates continue to increase for other cancers, such as for esophageal cancers, pancreatic cancers, liver cancers and thyroid cancers. Our research program aims to identify the reasons for the overall increased incidence of these cancers in Connecticut and elsewhere.

OUR RESPONSE
The Cancer Prevention and Control Program is part of the Yale Comprehensive Cancer Center, an NCI-designated comprehensive cancer center. Researchers from the Yale Schools of Public Health, Medicine, Nursing, and Yale College are working together to respond to the need to prevent and control cancer. The work we are doing is highly translational, with the potential to translate molecular studies into population-based preventive interventions. Researchers in our program have partnered with hospitals throughout
Connecticut and with the Connecticut Tumor Registry to conduct state-of-the-art scientific studies on cancers. Researchers interview hundreds of newly diagnosed cancer patients, and collect biospecimens so that we can better understand the factors associated with a particular cancer diagnosis. As a basis for interventions, our studies consider both genetic and lifestyle factors that impact on risk. For example, Yale researchers were part of the first team of U.S. scientists to identify that obesity and chronic reflux disease were key, modifiable risk factors that are likely responsible for the increasing incidence of esophageal cancer. Our research also has led to an understanding of susceptibility genes for these and other cancers, so that interventions in the future can be personalized based on an individual’s genetic risk for disease.

Even for cancers that are declining in incidence, there is much more research that is critically needed. For example, it is well-known that African-Americans are at higher risk of dying from breast cancer than Caucasian women. Researchers in our program are learning that both social and biological factors may account for these racial disparities. These studies are needed to appropriately target interventions to reduce racial disparities in these and other cancers.

WHAT WE HOPE TO ACHIEVE
The mission of our Cancer Prevention and Control Program is to reduce the burden of cancer incidence and mortality within and beyond the State of Connecticut. This mission can only be accomplished through interdisciplinary research, partnerships throughout Connecticut, evidence-based interventions and evaluations, and through training.

Interdisciplinary research
• We are collaborating with leading basic scientists, clinical scientists, and population scientists within and beyond the Yale Comprehensive Cancer Center to discover, develop, and deliver cancer prevention interventions.

Partnerships
• We are currently partnered with hospitals throughout Connecticut and with the Connecticut Tumor Registry to conduct our research. However, these partnerships could be extended in unique and creative ways to increase the pace of discovery in cancer prevention research.

Evidence-based interventions/evaluations
• We are working to develop, evaluate, and disseminate interventions with proven effectiveness for cancer risk reduction.

Training
• Education is central to our mission. We will continue to train public health professionals in cancer prevention research, and to extend this training to health professionals who can ultimately help to disseminate our discoveries to their patients.

PARTNERSHIP FOR CHANGE
Yale is uniquely positioned to maintain and improve its status as a center of excellence in cancer prevention research. Prevention remains our first and best defense against cancer. Financial support for the Cancer Prevention Program is critical if we are to implement and sustain our vision for preventing cancer. Support is particularly critical in the following areas:
• Pilot funds to help investigators collect data needed to apply for large-scale cancer prevention studies
• Internships to help train the next generation of cancer prevention researchers while contributing to the pace of research within our program
• Travel funds to allow investigators and trainees to present their cancer prevention research at scientific conferences

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Updated: July 2011