COUNTING CALORIES THE "SMART" WAY

The University of Hawaii Cancer Center’s Director of the Nutrition Support Shared Resource, Dr. Carol Boushey, led a team of investigators from Purdue University in developing a Smartphone application that reports nutritional information about food items that are captured within the snap of a picture.

The new application introduced in February may make it easier to count calories and help individuals work towards improving their diets and their health. “Our first goal in developing this system is to provide researchers an enhanced method of
measuring diet. Part of the confusion surrounding the link between diet and disease, including cancer, is a result of the inability to accurately assess usual dietary intake. We are optimistic that our tool will, when fully functional, provide this feature. This application has great potential to support ongoing work at UH Cancer Center exploring the role of diet in cancer.”

The application is being called the Technology Assisted Dietary Assessment system, or TADA. Users snap before and after pictures of their food, then the application sends that image to a server that determines the food’s identity and portion size for nutrient analysis. The information is then sent back to the user to confirm or adjust the labels of the food identified. But the application does not just count calories—it also provides information on the amounts of protein, fat, and carbohydrates in the food captured in the picture.

Dr. Boushey says one of the major obstacles the team encountered was measuring density, because there were no existing databases. This challenge prompted the team to develop novel messages to calculate density using x-ray computerized tomography (CT) scans and nuclear-magnetic resonance imaging (MRI).

The project required an interdisciplinary approach through a collaboration between Purdue’s electrical and computer engineering program, department of nutrition science, department of agricultural and biological engineering, and even the school’s office of technology commercialization.

Dr. Boushey joined the UH Cancer Center’s Cancer Epidemiology Program in May of 2011. Development of the Smartphone app was her brainchild while at Purdue.