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Researchers click nutrition with camera diet study

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A Purdue University team plans to help health-conscious people better gauge what's on their plates by using their cell phone cameras.

Carol Boushey, an associate professor in the Department of Foods and Nutrition, said the project would expand on a technique already in use by adding a strong scientific grounding. Currently, dieters can subscribe to online sites that monitor eating habits by critiquing photos they send of their meals. The idea offers busy people the chance to get nutritional feedback without spending time writing down all of their meals, drinks and snacks.

"This idea of using cameras to evaluate your diet by snapping pictures of your meals is not a new one," Boushey said. "What makes our proposal different is that we're designing the software to better evaluate portion sizes and nutritional content. Some of those online sites have sent messages to people advising them to stop drinking a soda when they were actually drinking tea. That will not happen here."

The team will receive $452,000 during the first year of an expected four-year study. The work is funded as part of a larger initiative, the Exposure Biology Program, from the National Institute of Environmental Health Sciences, a component of the National Institutes of Health.

Approximately $19 million was awarded during the first round of exposure biology grant announcements on Sept. 4. The program focuses on technological developments that better assess exposures to

environmental stressors, including chemical and biological agents, dietary intake, physical activity, psychosocial stress, and addictive substances.

The Exposure Biology Program is one of two complementary research programs outlined in the Genes and Environment Initiative, a five-year effort by the National Institutes of Health to identify the genetic and environmental underpinnings of asthma, diabetes, cancer and other common illnesses.

Boushey, principal investigator of the work, will provide the nutritional knowledge that will form the basis of the software's food evaluations and help determine possible health impacts. She said Purdue's strengths in foods and nutrition, technology and engineering made collaboration among researchers as simple as walking across campus.

Edward Delp, a professor in the Department of Electrical and Computer Engineering and an expert in image analysis, will be working to create a reliable method for estimating the sizes of food in the photos. David Ebert, an associate professor of electrical and computer engineering, will primarily be responsible for techniques to help confirm the portion sizes of the food in pictures. Kyle Lutes, an associate professor in the Department of Computer and Information Technology, will put his experience with hand-held computing devices to work by designing necessary programming.

"There is plenty of work for us to do," Boushey said. "It's going to be difficult to tell the difference between, say, lamb and a pork chop. There's the difficulty of discerning between three cups and one cup in a photo."

Evaluating food intake without the hassle of diet journals could impact American health, she said.

"We're committed to figuring out the details," Boushey said. "Diet is one of the most difficult exposures to measure in terms of how it contributes to disease. People are so confused about diet these days. We want to offer good advice to the public so they can stop throwing up their hands and saying, 'I'm going to eat whatever I want.'"

Source: Purdue University