### University of Massachusetts-Amherst Department of Nutrition

#### Current Faculty Research

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Research Interest</th>
<th>Significance</th>
<th>Sample Publications</th>
</tr>
</thead>
</table>
| Melissa Brown, PhD, RD  
Research Assistant Professor | Current activities in Dr. Brown’s lab are concentrated on improving treatment of diabetes. A particular focus addresses islet cell transplantation. Islet transplantation involves the removal of healthy islet cells from a deceased donor for transplantation into a diabetic recipient with the goal of providing the required insulin response to control blood sugars. Dr. Brown’s research addresses protecting islet cells after transplantation, enhancing the insulin secretory capabilities of isolated islets and investigating methodology to stimulate expansion and proliferation of beta islet cells in culture and in vivo. | Millions of diabetics suffer an extremely poor quality of life due to complications of their disease. The challenge is in finding a cure. One promising experimental approach is pancreatic islet cell transplantation. Islet cells are the cells in the pancreas that regulate blood sugar levels by secreting insulin. Type I diabetics are lacking this mechanism due to destruction of their own islet cells by an auto-immune response. While islet transplantation offers many advantages, there are still many obstacles to overcome before this procedure can become routine. With potential demand greatly exceeding the supply of available donor tissue, beta islet cell expansion and alternative sources of creating insulin producing cells are critical areas of research. | Bonomi, L., Brown, M., Ungerleider, N., Muse, M., Matzuk, M. M., & Schneyer, A. (2012). Activin B regulates islet composition and islet mass but not whole body glucose homeostasis or insulin sensitivity. American Journal of Physiology: Endocrinology and Metabolism, 303(5), E587-96. Schneyer, A., Brown, M. Altered glucose homeostasis resulting from developmental exposures to endocrine disruptors. In: Diamanti-Kandarakis D, Gore AC (eds), Endocrine Disruptors and Puberty. Springer/Humana, 2012. |
| Elena Carbone, DrPH, RD, LDN  
Associate Professor  
Graduate Program Director  
Director, Community-Engaged Research Program | Dr. Carbone works in community settings to examine how low income, minority populations (adults and children) with limited literacy skills attend to and process health information related to obesity prevention, diabetes and cancer control, and food safety. (find more information at www.umassextension.org/nutrition/index.php/research) | More than 90 million adults have limited ability to use print materials to accomplish everyday tasks with accuracy and consistency making health literacy one of the most important cross-cutting issues to improve health in the United States. Indeed, health literacy is germane to every facet of health and low literacy is an independent predictor of poor health. | Carbone, ET., and Buchanan, DR. (2013). The utility of community-based participatory research to address chronic diseases. Vestnik (Special Issue) Methods to Prevent Community Health Problems: Russian and American Prospectives, 45-52. Carbone, ET., and Zoellner, JM. (2012). Nutrition and health literacy: A systematic review to inform research and practice. Journal of the Academy of Nutrition and Dietetics, 112:254-265. Carbone, ET., Scarpati S and Pivarnik L. (2012). Food safety practices assessment tool: An innovative way to test food safety skills among individuals with special needs. J Food Science Educ, 12 (1):7-16. |

| **Nancy Cohen, PhD, RD, LDN**  
Professor and Head | Dr. Cohen’s research addresses assessment of dietary quality and food-related practices in older adults, evaluation of the need for and effectiveness of nutrition and food safety education programs, and distance education using technology. Older adults will comprise 20% of the U.S. population by 2030. Lifestyle factors such as diet will become increasingly important in maintaining and enhancing health and overall quality of life as the nation’s population ages. Research-based nutrition and food safety education programs and community interventions are needed to most effectively improve food safety and nutrition practices in diverse groups, including older adults.  
| **Lorraine Cordeiro, PhD**  
Assistant Professor | Dr. Cordeiro conducts research both in the U.S.A. and internationally. The primary focus of her research is on household food security and adolescent nutritional health. She is currently investigating the associations between food security, food practices, and health risks among Cambodian women in Massachusetts. Household food insecurity contributes to poor nutritional health, with negative consequences on growth and development across childhood. Dr. Cordeiro’s research examines the relationship between food insecurity and nutritional health. Her research has contributed to policy development on nutrition and adolescent health in Bangladesh and Tanzania.  
| Jerusha Peterman, PhD, RD, Assistant Professor | Dr. Peterman’s research focuses on health and nutrition issues of vulnerable populations, including refugees and other immigrants. Her work includes understanding the causes and consequences of food insecurity in these populations, and working with community agencies to address the causes and consequences through tailored health and nutrition education. Currently, she works with multiple refugee populations, English as a Second r Other Language students, and multicultural recipients of the Special Nutrition Assistance Program (food stamps). | Vulnerable populations have disparately high rates of nutrition-related chronic disease and food insecurity. The U.S. food environment, with its abundance of relatively low cost, low nutrient dense foods, likely contributes to poor nutrition and health. For immigrants, pre-immigration experiences, including food deprivation/insecurity, social disruption, and stress may contribute to both the poor health and food insecurity in the U.S. Understanding what contributes to these outcomes is crucial to designing, implementing, and evaluating successful targeted programs. | Peterman, JN., Wilde, PE., Silka, L., Bermudez, OI., Rogers, BL. (2013). Food insecurity among Cambodian refugee women two decades post-resettlement. J Immigr Minor Health, 15:372-380. Peterman, JN., Silka, L., Bermudez, OI., Wilde, PE., Rogers, BL. (2011). Acculturation, education, nutrition education, and household composition are related to dietary practices among Cambodian refugee women in Lowell, MA. J Am Diet Assoc, 110:1369-1374. Peterman, JN., Wilde, PE., Liang, S., Bermudez, OI., Silka, L., Rogers, BL. (2010). Relationship between past food deprivation and current dietary practices and weight status in Cambodian refugee women in Lowell, MA. Am J Public Health, 100:1930-1937. |
| Richard Wood, PhD | Dr. Wood's research is focused on molecular nutrition as a way of understanding the critical mechanisms responsible for controlling cellular vitamin D activity. Current work is focused on the effect of bioactive food components on epigenetic mechanisms that modulate vitamin D receptor activity. Vitamin D regulates intestinal mineral absorption and bone metabolism. Recently, the scope of vitamin D action has been expanded to include modulating cellular function in many other tissues, while vitamin D deficiency has been found to be a risk factor for several chronic diseases, including Type 2 diabetes and cancer of the breast, prostate and colon. The actions of vitamin D are modulated by both an individual's genetic polymorphisms and various epigenetic influences that can be modulated by diet. A better understanding of the complex interactions between diet, genetic and epigenetic factors may lead to improved disease risk profiling and design of targeted interventions in the future. |

For more information, contact:
Department of Nutrition
School of Public Health and Health Sciences
University of Massachusetts Amherst
Chenoweth Laboratory
100 Holdsworth Way
Amherst, MA 01003-9282
(413) 545-0740

To learn more:
www.umass.edu/sphhs/nutrition

Revised October 2013