

Member Spotlight

Pat Crawford DrPH, RD

Erin Gaffney-Stomberg, PhD, RD



The RDPG member in the spotlight this month is Pat Crawford, DrPH, RD. Dr. Crawford is the Director of the Dr. Robert C. and Veronica Atkins Center for Weight and Health at the University of California, Berkeley; a Cooperative Extension Nutrition Specialist in the College of Natural Resources; and an Adjunct Professor in the School of Public Health, also at the University of California, Berkeley. Read our interview below to learn about Dr. Crawford's inspiring path, which includes earning a doctoral degree later in her career before going on to develop a successful line of research in policy and program evaluation to prevent childhood obesity and improve the health of children and their families.

Would you describe your current position for us?

I am currently director of the Dr. Robert C. and Veronica Atkins Center for Weight and Health. As director, I oversee approximately 18 intervention and evaluation research projects and over 25 research staff at the Center. I serve on a number of advisory boards and committees including the Institute of Medicine's standing Committee on Childhood Obesity Prevention, the Institute of Medicine's Committee on WIC Research, and the Institute of Medicine's Committee on Food Insecurity and Obesity.

What is your background and how did you get to where you are now?

I received a Bachelor of Science degree in nutrition and dietetics and from there I went immediately into a Master's of Public Health and RD coordinated program at the University of California, Berkeley which exposed me to a wide variety

of community nutrition studies and issues. Both my undergraduate and my master's level mentors were focused on childhood obesity prevention research and this inspired me to focus my efforts in this area as well. For quite a few years I worked in nutritional epidemiology as a project manager/director of research under different professors who were conducting longitudinal studies on factors associated with the development of childhood obesity. Rather late in my career once my children were older I decided to move from the study of risk factors for obesity to the study of interventions to prevent obesity. With the urging of my mentor, I decided to go back to school to get my DrPH in Public Health. I graduated with my doctorate when my children were graduating high school. When I finished my doctoral degree, I wanted to work in the area of community intervention – specifically, I was anxious to work with schools and communities to prevent obesity. In 1999, with my colleagues at UC Berkeley, Joanne Ikeda, MA, RD and Sharon Fleming, PhD, I co-founded the Center for Weight and Health.

What is the focus of your research?

My current research is primarily on program and policy evaluation to prevent childhood obesity. I prefer to focus on child obesity prevention programs and policies that can have a real effect in real time. I think it is important to strategically select the types of interventions that can impact pediatric obesity in the settings where children spend their time: preschools, schools, and other community settings. I conduct my

research using a social ecological approach with the emphasis on creating healthy food environments for children and families.

How did you become involved/interested in your current line of research?

During my undergraduate and graduate training I was very fortunate to have inspiring mentors in the field of obesity prevention and they influenced my direction. I wanted to combine my work in understanding nutrition with working in the areas of pediatrics and disparities.

What advice would you give to a young researcher for developing a successful line of research?

- Define a topic you are passionate about
- Find niche that offers a slightly different angle to the area or brings together a different combination of topics.

What are your career goals?

At this point in my career, my goal is to mentor younger researchers in the area of program and policy evaluation to prevent obesity. By working with others I feel I can have an important impact on the future of the field.

How has your affiliation with ADA impacted your career progression?

My affiliation has been strong and consistent throughout my career. I have had opportunities through committee work to be involved in crafting future directions for the association in the area of child

Continued on page 8

Nuts and Bolts

Interpreting Statistical Analysis Results

Inés M. Anchondo, DrPH, RD, LD, CSP, MPH



In conducting research that involves hypothesis testing it is imperative to know how to interpret statistical analysis results. The two possible outcomes are:

1. Reject the null hypothesis* in favor of the alternative hypothesis.
2. Fail to reject the null hypothesis, which is, in a sense, rejecting the alternative hypothesis although this is not how it is commonly discussed in statistics.

* *The null hypothesis, represented by the symbol H_0 , usually states that there is no change or no effect of a treatment or intervention. The research or alternative hypothesis should specify the subject group being tested or investigated, treatment or exposure, outcome measure or measures, and comparison or control group, if there is one. The research or alternative hypothesis, represented by the symbol H_1 , is a statement that is a complement of the null hypothesis.*

Rejecting the null hypothesis when it is true leads to the Type I error and failing to reject the null when it is false leads to a Type II error.

The probability of a Type I error is designated by the Greek letter alpha (α) while the probability of a Type II error is designated by the Greek letter beta (β).

The *Type I* error probability or false-positive probability is also known as the significance level of the research study. This is α and it is commonly set at 5%, meaning there is a 5% probability or risk of reaching a false-positive conclusion. The α level is compared to the p value (a measure of the evidence against the null hypothesis), if the p value is less than the α , then, the null hypothesis is rejected in favor of the alternative hypothesis. A large p value means there is not enough evidence to reject the null hypothesis. However, reaching this conclusion should be not done automatically as an inadequate sample size (low power)

could be the reason. The α level should be set before the study is conducted.

The *Type II* error or false-negative is not an 'error' in the true sense of the word because what happens is that the null hypothesis was not rejected and, in a way, no conclusion was reached. As the β decreases, the power increases. The power is the ability of the statistical test to detect an effect. The β level is also set before the study is conducted. In interpreting statistical analysis results there has to be a balance between *Type I* and *Type II* errors. Choosing a low α level (*Type I* error) increases the β risk (*Type II* error) if the sample size remains the same. Requiring very strong evidence (low α level) to reject the null hypothesis makes it unlikely that a 'true' null hypothesis will be rejected. However, doing this increases the possibility (β level) that a 'false' null hypothesis will not be rejected, thus lowering the power to detect a change or effect.

Member Spotlight

continued from page 7

obesity prevention. Through my involvement as faculty on the Certificate of Training in Childhood and Adolescent Weight Management program, I have been able to suggest changes in training to align closely with current trends in the field. As the obesity field has changed, the organization has been eager and receptive to move with the current needs. It has been fulfilling to work with the association when they are open to making changes in training and setting goals that address the

current issues of our time such as childhood obesity.

If someone were to ask you to explain, "why research is important to the field of dietetics", what would you say?

The field of dietetics is ever-evolving as we learn more and more about nutritional needs. For example, the dietary guidelines are reviewed and updated every 5 years to reflect new research findings and

the public counts on dietitians to translate the ever-changing nutrition information. Research is key to these translations and provides the rigor in our approach to positively impact programs and policies that can promote a more healthful population. I have seen the benefit of a single well-done program evaluation in a particular area of nutrition, which has provided key answers for policy makers. This is truly an exciting time for community nutrition research.