

NUTRITIONAL SCIENCES DIGEST

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FALL 2022 EDITION

Department of Nutritional Sciences,
University of Wisconsin-Madison

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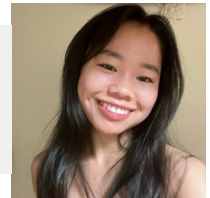
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Whey for Weightloss

PRIORITY AREA: ENHANCING HUMAN HEALTH AND NUTRITION

Obesity is a major problem in the United States. It affects one in three adults and contributes to inflammation, diabetes, cardiovascular disease, and premature death. Nutrition expert Denise Ney wants to do something about it. One solution may come from an unlikely source: cheese. Or, more specifically, a cheesemaking byproduct.

Ney, a professor in the Department of Nutritional Sciences, has determined through extensive research that a protein isolated from cheese whey has anti-obesity properties, especially in women. Based on studies in mice, the protein, called glycomacropeptide (GMP), reduces hunger hormones and tissue inflammation; improves the breakdown of fat; increases bone mineral content; and positively alters gut microbiota. Now Ney is examining the potential benefits of GMP for humans.

In her Hub-funded pilot study, 10 obese, postmenopausal women will each consume GMP supplements for two, seven-day periods at home. Then they will visit the UW Clinical Research Unit four times for meal-tolerance tests, followed by blood draws. Ney's goals are to gather additional data supporting GMP as a weight-loss supplement, garner funding for



Denise Ney drinking a supplement shake. Nutritional sciences professor Denise Ney samples a supplement shake for weight loss that she developed using a protein isolated from whey, a byproduct of cheesemaking. Photo by Austin Helmke

further study, and ultimately license a patent through the Wisconsin Alumni Research Foundation.

Ney has a track record of developing a health aid from GMP. She pioneered the use of medical foods made with GMP for the dietary management of phenylketonuria, or PKU, a rare genetic disease that allows an amino acid to build up in the body and cause complications. GMP lacks this amino acid. The medical food she helped develop is being used by PKU sufferers around the world. (See “New Clues to Healthy Bones for People with PKU” in *Grow*, Fall 2017.)

“It’s extremely rewarding to see the impact of your research actually improve people’s lives,” Ney says. “For families affected by PKU, it has been huge. It has changed the standard of care for nutritional management of PKU.”

Ney worked with a whey-processing company to develop the GMP powder, which is mixed with eight ounces of water and comes in chocolate and vanilla flavors.

“From our early subjects, we know the product is well tolerated and pleasant tasting,” she says.



While there are countless protein supplements already on the market, this anti-obesity version Ney has developed is different because it contains GMP, which has unique properties to promote weight loss while supporting bone health. It’s also a prebiotic, which helps nourish the growth of good bacteria that exist naturally in the gut.

Ney hopes to have data from all 10 study subjects by this summer. If all goes well with the pilot and with longer-term research, she says a company could license and commercialize the product, and it could someday be found on store shelves next to other protein supplements.

“It has many applications for weight control as a meal replacement, as a source of protein for anyone who wants to build muscle mass,” Ney says. “When you lose weight, you lose bone, and that’s a problem for postmenopausal women. I could see people using it long-term, once or twice a day, to support and maintain weight loss.”

**This article was taken from "Innovation through Campus Cooperation in America's Dairyland," an article from *GROW: Wisconsin's Magazine for the Life Sciences*.
Read more [HERE](#).**

Apple Season



It is officially fall in Wisconsin, and that means apple-picking season has started! Don't let the pumpkin and other Halloween treats overshadow the oh-so-versatile apple!

Apples are naturally high in Vitamin C and potassium, and they are considered a fiber-rich fruit. An average apple contains four grams of fiber, which is approximately 15% of the recommended daily fiber for an adult. Apples contain both insoluble (skin) and soluble fiber (flesh), both of which are touted to benefit the heart and help promote the growth of good bacteria in the gut. Apples make a great low-calorie snack with around 80 calories for a medium-sized apple. They are easy to eat on the

go, and with their carb and fiber content can help keep you satisfied.

Due to Wisconsin's cold winters, apple season can be short, with the main harvest times being mid-August through the end of October. There are lots of apple orchards in and around the Madison area to visit with many different varieties, and options to pick your own.

"Apples are naturally high in Vitamin C and potassium, and they are considered a fiber-rich fruit."

Many local farms also sell berries, grapes, squash, gourds, and pumpkins. See last year's CALS wellness committee article on a list of local orchards here.

If you end up going all out and filling a large bag, and have limited fridge space, such as myself, you want to make sure you are storing your apples for the longest shelf life. Best is cold-storage in 35-40 degree Fahrenheit, however, a root cellar or a cool basement would work too. Remove any apples with blemishes first (one rotten apple...as the saying goes), and you can try wrapping each apple in newspaper. Then store in shallow boxes in a dark cool place, and check in on them often.



As you pull your apples from storage, you can use them in all sorts of ways: from pie to applesauce, chutney to cider. They can be added to salads, baked in dishes savory and sweet!

Sunday evening, September 25th marked the start of the Jewish New Year- Rosh Hashanah that will last through Tuesday, September 27th. Sliced apples and honey will grace dinner tables, as many will dip their slices in honey as both foods symbolize the hope for a sweet new year.

Wishing you and yours a Shana Tova! (a good year).

Taiya

This article was written by Taiya Bach, a teaching faculty II and a registered dietitian nutritionist with the UW-Department of Nutritional Sciences, and a member of the CALS Wellness Committee.

This article recently appeared in [ECALS](#).

Awards and Acknowledgements



ERIKA ANNA

Erika Anna, teaching faculty in the Department of Nutritional Sciences, has been awarded a one-time endowment from the Jerome and Dianne Spector Healthy Living Fund to support travel, lodging, and supplies related to her outreach as a public health and community nutritionist with Family Health La Clinica Migrant Mobile Primary Care Services. Congrats Erika!

ADAM KUCHNIA

Adam Kuchnia, assistant professor in the Department of Nutritional Sciences, has been selected to receive an Elton D. and Carrie R. Aberle Faculty Fellow Award. The Aberle Faculty Fellow Award, established by former CALS dean Abe Aberle and his wife Carrie, is designed to recognize and reward promising young faculty within CALS, providing support and encouragement during the critical, pre-tenure period.



Awards and Acknowledgements



KAYLEE FURNESS

Kaylee has been awarded a Cargill/Benevenga Undergraduate Research Stipend for Fall and Spring Semesters of 2022-23. This scholarship is offered to both graduate students and undergraduate students who wish to get a start in hands-on-research. Kaylee will use this stipend to support the laboratory of her mentor, Dr. Rick Eisenstein. Congrats and good luck on your studies, Kaylee!

ROBERT HATCH

Robert has been awarded a Cargill/Benevenga Undergraduate Research Stipend for Fall and Spring Semesters of 2022-23. This scholarship is offered to both graduate students and undergraduate students who wish to get a start in hands-on-research. Robert will use this stipend to support the laboratory of his mentor, Dr. Eric Yen. Congrats and good luck on your studies, Robert!



Undergraduate Highlight

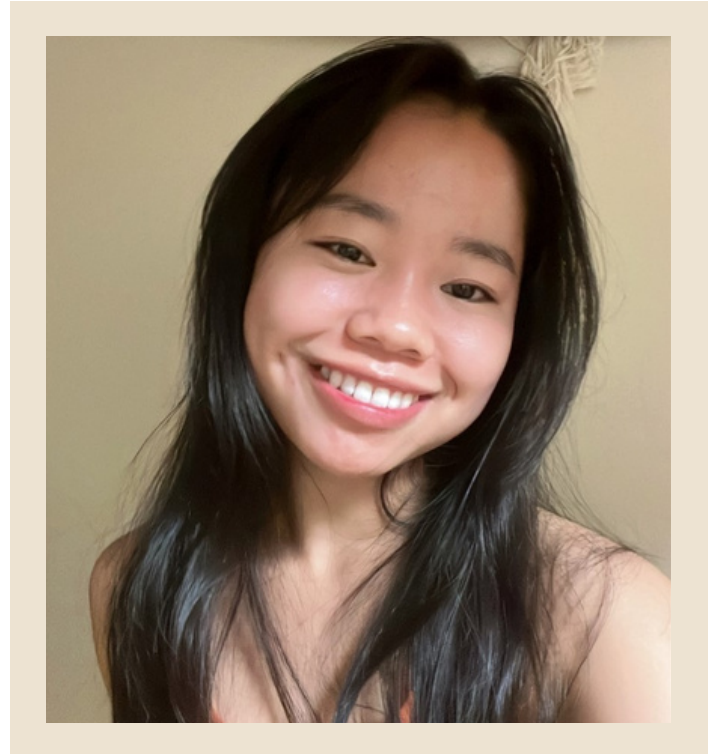
Maiyia Vang

What are your majors/certificates?

My major is Nutritional Sciences. I'm also getting a certificate in Southeast Asian Studies.

Why did you choose UW Madison?

I chose UW Madison because I received more financial support compared to other universities. The PEOPLE program offered me full tuition, and I received Bucky's Tuition Promise Plus. So, as a first-generation and low-income student, UW-Madison is the best choice for me. Moreover, I had the opportunity to do an internship in the Nutrition Department during my senior year of high school, which inspired me to pursue Nutritional Sciences at UW-Madison. Overall, UW-Madison was the best choice in terms of finances and education.



What is your favorite memory from attending UW Madison?

My favorite memory from attending UW-Madison was walking on frozen lake Mendota with friends and seeing the sunset up Observatory Hill. At first, I thought it would be impossible for lake Mendota to freeze completely, but it did. Also, the sunset up Observatory Hill in the summer is like a scene from Ghibli Studio.

What is your dream job after college?

It's hard to know what exactly I want to do. My dream job and goals might change as I continue my undergraduate studies. For now, my dream job is to research child malnutrition prevention in developing countries. So, after my undergraduate, I want to attend graduate school and obtain my Ph.D. I hope that by doing research, I can find methods to decrease or prevent child malnutrition in developing countries like Laos, and the Philippines. Another goal is to develop a program involving this topic. Still, I have a long way to go.

What do you like to do in your free time outside of work and school?

I have been practicing yoga for some time now and it is my favorite thing to do outside of work and school. I told myself that if everything doesn't work out with graduate school or my career goals, I will become a yoga instructor.



A Glance at the Dietetics and Nutrition Club's Fall Semester

Written By: Lily Anne Montgomery, DNC President

The goal of the DNC is to strengthen the relationship between club members and professionals in the field of dietetics and nutritional sciences, encourage leadership and initiative, and provide a social network for students with similar interests.



From right to left: Painting Fundraiser, Coconut Lab with Scott Anderson, a quick selfie after volunteering with River Food Pantry.

For meetings, we bring in guest speakers who are working dietitians or in similar healthcare fields. This semester, we have changed our historic flow and started to have more student-oriented meetings in a post-pandemic world. Although we still invited some fantastic professionals, such as Amber Haroldson, Sarah Golla, and Erika Anna, we have also introduced an Around-The-World meeting style and held Executive Board panels.

The club offers a variety of volunteer opportunities. This semester we focused on the nonprofit River Food Pantry, where we visit the site and help increase access to food while decreasing food waste for the greater Madison community. We also partnered with other Global Health organizations on campus in a fundraiser where we painted DIY tote bags to raise money for a new hospital in Kenya. We love to collaborate with Slow Food UW as well, where we fight food insecurity on campus and create meals using local and sustainable food production.

We have had a lot of fun social activities as well. Outside of our normal volunteer and professionalism events, we went to the Farmers Market, hosted Lunch n Learns to participate in nutrition education, learned about coconuts and Indigenous Hawaiian food practices with Scott Anderson, celebrated holidays like Halloween with potlucks, and had fitness socials at the Nicholas Recreation Center.

GET INVOLVED!

DNC is a great way to gain better insight into the field of dietetics and nutrition while gaining volunteer and leadership experience! If you are interested in speaking for us or collaborating in the Spring 2023 semester, joining the club as an undergraduate member, or looking for volunteers or nutrition education opportunities, please contact wisc.dnc@gmail.com.

Special thanks to those who helped make our Fall 2022 semester awesome!



In Memoriam

Zhumin Zhang

It is with great sadness that we convey the news that Zhumin Zhang, a longtime member of the Lai lab, passed away on November 10th.

Zhumin was a skilled and highly collaborative epidemiologist and biostatistician, with particular expertise and interest in the fields of epidemiology, nutrition, cystic fibrosis, and chronic pediatric diseases. She obtained multiple degrees at UW-Madison, including masters degrees in biometry and statistics, and a PhD in nutritional sciences.

She was a wonderful member of our Nutritional Sciences community for many years and will be missed.



“I was gutted to learn of Zhumin’s passing. What an exceptionally smart, incredibly kind and infectious positive individual. She was a pleasure to work with and I’m sure that many will feel her loss greatly both personally and professionally.”

– Anonymous

“Zhumin was a remarkable, bright, kind, sweet, generous person. She was a wonderful colleague and collaborator. She was a very supportive and caring mother to her beloved son. It was a joy to have known her, and I am very grateful for the time we shared.”

– Roxana Alexandridis

Please submit any memories you would like to share by sending an email directly to Sue Carlson at carlson@biostat.wisc.edu.

Jerome and Dianne Spector Healthy Living Endowment Supporting the Wisconsin Idea



Primary Care Mobile Health Center in Gillett, WI with UW – Madison Fleet Van used by Erika Anna.

Nutritional Sciences teaching faculty Erika Anna joined Family Health La Clinica (La Clinica) Mobile Migrant Health Services as a public health and community nutrition (PHCN) registered dietitian nutritionist (RDN). The scope of her role includes ambulatory nutrition services within primary care delivered via a Mobile Health Center focused on making healthcare accessible to rural communities across Wisconsin.

Erika's work was funded through the one-time endowment from the Jerome and Dianne Spector Healthy Living Fund to support travel, lodging, and supplies.



One of the longest and deepest traditions surrounding the University of Wisconsin, the Wisconsin Idea Signifies a general principle: that education should influence people's lives beyond the boundaries of the classroom.



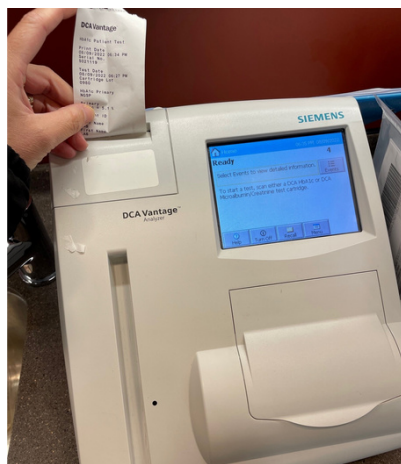
The COVID-19 pandemic has highlighted the need for preventative nutrition services to promote population health. Applying a policy, systems, and environmental (PSE) approach, PHCN RDN are charged with applying principles of nutrition to support the health of populations. PHCN RDN support mitigation and elimination of acute and chronic malnutrition ensuring that trauma-informed, culturally relevant, and harm-reducing care is provided. Relied upon during certified domestic labor shortages, MSAW are essential to the success of the U.S. food system. This often-invisible population has been illuminated during the ongoing pandemic for the risks COVID-19 poses to the social determinants of health (SDoH).

SDoH, the conditions in which people are born, live, learn, work, play, worship, and age, continue to drive nutrition-related health disparities and chronic disease. Food and nutrition insecurity has a significant impact on the SDoH, and is known to be pervasive among MSAW due to lack of transportation, rural housing, accessibility of kitchens, refrigeration, etc. PHCN RDN are in a strategic position to utilize the Nutrition Care Process (NCP) which identifies the etiology of the nutrition problem and takes a PSE approach to respond to SDoH which often include food and nutrition insecurity.

Putting the Wisconsin Idea into action, Erika incorporates La Clinica outreach into the courses she teaches. Through either hands-on or peripheral patient contact, graduate and undergraduate students (respectively) learn about MSAW communities within Wisconsin, appreciating their crucial contributions to the state, as well as, identifying structural factors negatively impacting health status. In her partnership with La Clinica, Erika



Health Aids Britney Steuck and Luis Barraza processing point of care lipids in the Mobile Health Center.



Patients receive point of care A1c which is a simple blood test that measures average blood sugar levels over the past 3 months.

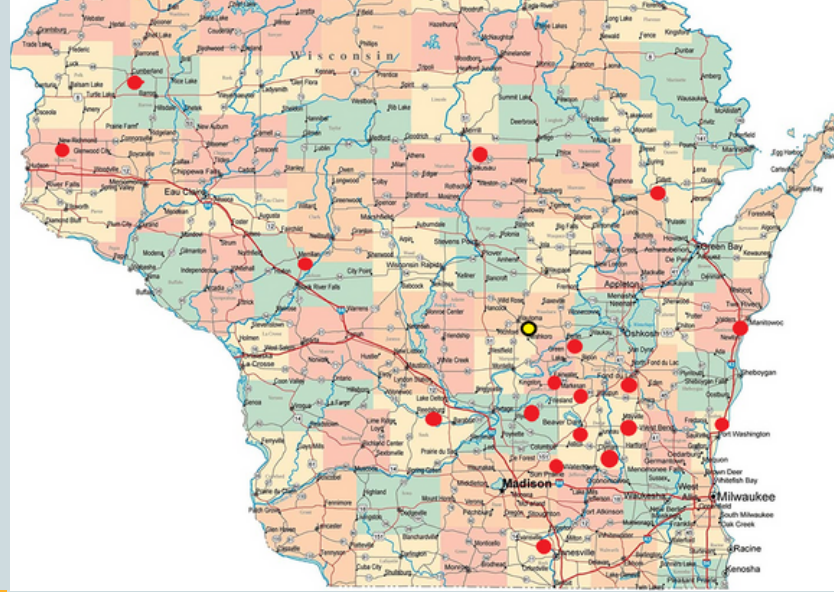


Erika Anna and Health Aid Britney Steuck in one of the two exam rooms in the Mobile Health Center in Belgium, WI.



Supplies Erika Anna is able to provide at the point of care.

2022 primary care clinics Erika attended, with Wautoma, WI as home base for MSAW Ops and the Mobile Health Center.



In her work, Erika uses culturally responsive food and nutrition resources such as this Spanish-Language Comic Book on Living with Diabetes from the Migrant Clinicians Network.

provides students with the opportunity to work on real world health and health care issues in real time within an under-resourced and often vulnerable population. Thank you to Dianne Spector and the Jerome and Dianne Spector Healthy Living Fund for the opportunity to work with a population so critical to the success of the U.S. agricultural system.

Search the following organizations to learn more about supporting the health of MSAW populations:

[Farmworker Justice, Inc.](#)

[Farmworker Health](#)

[Migrant Clinicians Network, Inc.](#)

[Migrant Health Promotion](#)

[National Center for Farmworker Health, Inc.](#)

[National Association of Community Health Centers, Inc.](#)

This article was written by Erika Anna, MS, RDN, CD, teaching faculty with the UW-Department of Nutritional Sciences

Word Search

Nutritional Sciences

D R S Y Q L L Y V R B N B U U F U Y G S
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1. Carbohydrate
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3. Nutrition
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