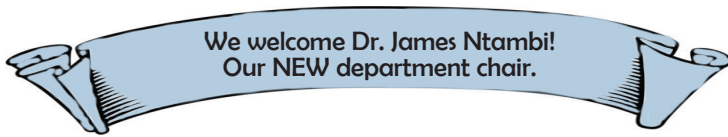


# Nutritional Sciences

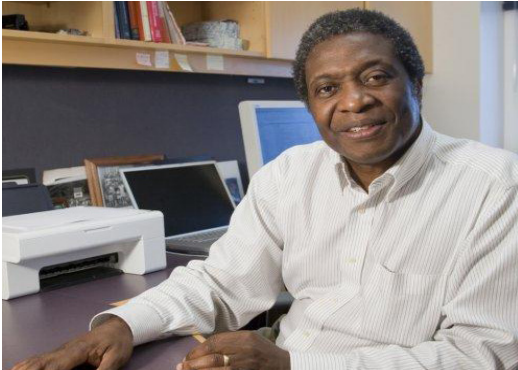
An Alumni Resource Newsletter

# Digest

Fall 2011




## *A note from the Chair Dr. James Ntambi*



**Dr. James Ntambi** took the position as chair of the Department of Nutritional Sciences in July following Susan Nitzke's retirement. He has served both the Depts. of Nutritional Sciences and Biochemistry of UW-Madison for 19 years. Welcome!

Greetings to all our Nutritional Sciences graduates, faculty/staff, alumni, and friends! We are pleased to give you another update regarding some of the exciting events that are going on in our Department this fall semester.

Please help us keep in touch with our alumni and friends by passing this newsletter along to others who may be interested in our work. We also encourage you to share news about your career status or update your contact information by sending an email to: [office@nutrisci.wisc.edu](mailto:office@nutrisci.wisc.edu)

To help us keep in touch between newsletters: please  our Facebook fan page at: [www.facebook.com/UWNutriSci](http://www.facebook.com/UWNutriSci)

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Please note that some of the articles featured in this newsletter were written for CALS Grow Magazine.

For more information, check out their website: [www.grow.uwcalcommunication.com](http://www.grow.uwcalcommunication.com)

# An Update from Dietetics & Nutrition Club

The Department of Nutritional Sciences undergraduate student club, Dietetics and Nutrition Club (DNC), has some exciting events planned for this semester. We appreciate all the hard work put into student involvement. Check out their calendar below of upcoming events and join in on the fun:

## Healthy Handouts:

*Tuesday, November 1st*

Members hand out pamphlets about seasonal produce at the Memorial Union.

## Club Cooking Class with Chef:

*Wednesday, November 16th*

Learn how to cook Asian food! Located in Babcock (FAL) and cost is \$5.



## "Fun & Fabulous Food Day"

*Friday, November 18th (3-6pm)*

Host booth at elementary school with display of healthy snacks.

## Dinner with Dietitians:

*Wednesday, December 7th*

Great networking event! Meet and chat with RDs in the area.

## REAP Volunteering:

Teach children how to cook healthy and fun things!

## St. Mary's Hospital Volunteer:

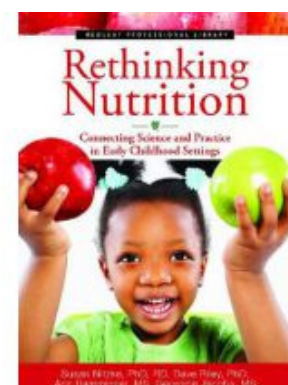
Help employees register for the hospital's LiveWell Program.

# Dr. Susan Nitzke Enjoys Retirement

After being a faculty member and Extension Specialist in Nutritional Sciences for 25 years and Department chair from 2008-2011, Susan Nitzke retired and became a UW Professor Emerita this past June.

Our Department will miss the breadth she brought to our programs, especially her work with nutrition/health coalitions and her expertise in nutrition education, community nutrition and public health.

Susan reports that her new grandchild, her many hobbies, watercolor art, travel, volunteer activities, and gardening have quickly soaked up all the time that was freed up by retiring.



# Update on IGPNS Selenium Research

*Selenium is a known cytotoxic compound at high enough concentrations, but mechanistically it's unknown as to why it is toxic. IGPNS Graduate Student CJ Boehler is setting out to discover some of the underlying changes associated with selenium metabolism occurring during selenium toxicity.*

The trace mineral selenium (Se) is essential for a number of biological processes ranging from antioxidant function to thyroid metabolism.

The window between Se adequacy and Se toxicity in humans is relatively small with the RDA currently set at 55 µg/day and a tolerable upper limit of 400 µg/day. Recent interest has emerged with Se supplementation at levels well above the RDA as a result of epidemiological studies that suggested Se has cancer-preventative effects.

However, optimal Se consumption is complicated because it can act as pro-oxidant at elevated concentrations, and a recent large NIH trial (SELECT) was stopped when supplementation with 200 µg Se/day was not reducing prostate cancer risk, and Se also seemed to be linked with increased risk for diabetes.

These studies indicate there is a clear



need for further understanding of the biology and metabolism underlying Se toxicity.

Through funding from the Frost fellowship and Hatch grant, IGPNS Graduate Student, CJ Boehler, set out with the help of Dr. Roger Sunde and Anna Raines to further understand changes associated with Se metabolism occurring during Se toxicity.

His research is primarily funded by a Hatch Grant, which is a federally sponsored, competitively awarded project that focuses on graduate students' research issues. This year CJ received special funding from the Douglas & Muriel Frost Memorial Fellowship Fund which was founded to support graduate students, especially in the research

of minerals.

CJ and his team chose a *C. elegans* (*Caenorhabditis elegans*) biological model because genes are easily knocked-out in *C. elegans*, and they contain all the necessary machinery for incorporation of Se into Se-dependent proteins (selenoproteins).

*C. elegans* are a free-living nematode that exist in the soils of temperate regions across the world. They are non-parasitic worms, so they have little effect on the host environment they live in and they feed on bacteria as a food.

*C. elegans* express a single selenoprotein, thioredoxin reductase-1 (Trxr-1), which is claimed to be critical in selenium metabolism. When the *trxr-1* gene was knocked-out, they found the *trxr-1* knock-out was not lethal and does not significantly alter susceptibility to Se toxicity.

This indicated a role for an alternate enzyme(s) to act in the absence of Trxr-1 to handle excess Se. The ease of genetic manipulation, ability to incorporate Se into Trxr-1, and appropriate toxicity response to Se makes *C. elegans* an ideal eukaryotic organism to study changes in Se metabolism that occur during Se toxicity.

## Faculty Emeriti Reunite at May Luncheon

In late spring of this year, the Emeritus faculty and staff were invited to a reception honoring their contributions over the years to the Department of Nutritional Sciences.

The current faculty also joined the gathering to update the retired staff on the department's current research projects and educational programs.

Dr. Susan Nitzke introduced Dr. James Ntambi of Biochemistry to the group as he would be taking over her position as chair July 1.

Professor Emerita, Jane Voichick, hosted the event. Also in attendance were Dorothy Pringle, Ben Benevenega, Charles Elson, Robert Swick, Cheri-Bill Mahoney, Sandy Weigt, as well as several current faculty such as

Denise Ney, David Eide, Eric Yen, and Sherry Tanumihardjo.

We are grateful that our department stays in touch with our retired faculty and friends. It is always so great hearing about the amazing work they continue to do!

The dedication current and former staff members offer and share with us are what make the Department of Nutritional Sciences a success.



*Pictured above: Charlie Elson, David Eide, Ben Benevenega, and his wife, Cynthia.*



*Pictured above: Robert Swick at Emeriti Luncheon in May*

*We are sorry to share that former Chair and founding department faculty member Dr. Robert Swick, Ph.D., Emeritus Professor of Nutritional Sciences, passed away Nov. 11 at the age of 86. Along with Alf Harper and Ben Benevenega, he gave UW-Madison a high profile in amino acid and protein metabolism research. He was an early expert in mitochondrial uncoupling and thermogenesis. He retired in June of 1989. We appreciate his contributions and our thoughts are with his family.*

# Australia hosts ISBNPA Conference in June



Lynette Karls, Mallory Koenings and Susan Nitzke were invited to Melbourne, Australia to attend the International Society for Behavioral Nutrition and Physical Activity (ISBNPA) conference in Melbourne this past June.

Mallory, an IGPNS graduate student, obtained a Vilas travel award to present data from her research with Susan Nitzke on alcohol availability on college campuses.

CALS and the Madison Initiative for Undergraduates program provided support for Lynette's travel to help her develop more internationally-oriented and culturally-sensitive learning experiences for our dietetics students.

ISBNPA has an international presence with nearly 400 members representing 29 countries. Members come together from more than 40 government agencies, industry and professional organizations as well as close to 150 academic and medical institutions.

Please keep us up-to-date on your career, research, or life experiences!  
We'd love to hear from you and include you in our next issue!

E-mail us at: [office@nutrisci.wisc.edu](mailto:office@nutrisci.wisc.edu)

## Alumnus Feature: Chrisanna Gregersen Harrington

**Chrisanna Gregersen Harrington M.A., R.D./L.D., L.M.H.C., N.C.C. is 1981 CUP Graduate. After our Spring 2011 issue, she gave us an update on her career journey:**

*Dr. Dorothy Pringle was my adviser and Sally Gleason was one of my CUP Instructors. Thanks to Sally I can do an ADA Exchange Meal Plan in my head! It has served me well in preparing Meal Plans. I was probably one of the most likely not to succeed; however, what I found out in the real world was that the education I received in the UW Nutrition Dept and in the CUP Program set me apart from other young dietitians in the world. I also passed the ADA exam on the first try!*

*The education I received from the program was excellent and prepared me to launch a wonderful career. I received my Masters Degree in Mental Health Counseling in 2005 and now counsel people with eating disorders. I try and help bright young women who just may not be performing the best that they can because of other stuff going on in their minds that keeps them from shining.*

*Thanks to the foundation that I received from UW and the Masters in Mental Health Counseling I founded Nutegra Mental Health and Nutrition Inc. in 2008. The website is [www.nutegra.com](http://www.nutegra.com).*

*I live in Punta Gorda, Florida and am always looking for dietitians who may want to retire in a warm friendly climate, yet may not quite want to stop working. (I have contracts with a Bariatric Group, nursing homes and private clients. A lot of variety.)*



Courtesy of [www.nutegra.com](http://www.nutegra.com)

**We are so proud of our alumni and the impact they have on the world. Please send us your updates so we can include you in future issues!**

# An Update on Dr. Denise Ney's PKU Research

## Medical foods for PKU diet enter phase II clinical trials

By Nicole Miller

Mealtimes aren't quite as enjoyable for people with phenylketonuria (PKU) as they are for the rest of us. Those with this genetic disorder have to get their protein by drinking a foul-tasting amino acid "formula."

At the same time, they must avoid natural proteins — eschewing burgers, ice cream and even regular bread — because they lack the enzyme needed to process phenylalanine, one of the 19 amino acids that comprise protein.

If people with PKU do succumb to the temptation of protein-laden foods, phenylalanine builds up in their bloodstream like a toxin, causing fatigue, anxiety, depression, concentration problems and sometimes brain damage. For expecting mothers, high phenylalanine levels can trigger poor growth, birth defects and developmental delays for the infant.

But now they have a more palatable option: a dietary regimen that features a special protein known as glycomacropeptide (GMP), which is derived from cheese whey and contains only trace amounts of phenylalanine.

Today's availability of GMP medical foods is the result of an eight-year, multidisciplinary effort led by Denise Ney, a University of Wisconsin–Madison professor of nutritional sciences.

Ney's team's work paved the way for Cambrooke Foods, a Boston-based medical foods company, to start manufacturing and selling GMP-based products for people with PKU in 2010.

Now, with a grant from the FDA's Orphan Products Development program, Ney is gearing up to conduct phase II clinical trials of this new

nutritional approach, hoping to show that GMP medical foods are a superior option to the traditional amino acid formula.

"My hypothesis is that it's easier for people with PKU to follow their low-phenylalanine diet if they use GMP medical foods, and that this nutritional approach will result in better control of blood phenylalanine levels and maybe also improved cognitive function [compared to the amino acid formula]," says Ney. "If the study is able to establish this, then it's my hope that GMP medical foods will become the standard of care for the PKU community."

GMP is a natural, intact protein, so it tastes like protein. Cambrooke Foods' BetterMilk — which consists largely of GMP, with some limiting amino acids to make it a complete source of protein — can be mixed with water to form a milk-like beverage or incorporated into fruit smoothies, "chocolate milk" and Alfredo sauce.

*"Receiving this FDA grant is a win for the whole PKU community"*

**-Denise Ney**

"For teenagers and adults who cannot tolerate their amino acid formula, this is a major breakthrough," says Ney. The company is currently expanding their line of GMP products, with a variety of protein-rich sports drinks, meal replacement bars and puddings in the works.

The FDA's Orphan Products Development grant program is designed to encourage the development of new safe and effective medical products — including medical foods — for rare diseases or conditions. With only 15,000 people with PKU in the U.S.,

Ney's study is a great fit. During the study, 30 subjects with PKU who are currently being cared for by the UW Waisman Center and Children's Hospital of Boston will consume GMP medical foods for three weeks and — separately — the traditional amino acid formula for three weeks, with a "wash-out" period between the two phases.

The results will allow Ney and study coordinator Sandra van Calcar, an assistant professor of pediatrics at the UW–Madison School of Medicine and Public Health, and their collaborators at the Waisman Center, Children's Hospital of Boston and the UW Institute for Clinical and Translation Research to compare the blood phenylalanine levels, dietary compliance and cognitive function associated with the two diets.

Ney hopes this study will win over physicians and metabolic dietitians who are still hesitant to prescribe GMP medical foods to their PKU patients.

"Some of them want to have more information about safety, about what GMP does to blood phenylalanine levels and so forth, and I respect that," says Ney. "I think this study will address their concerns."

Over the years, the national PKU community has supported Ney's GMP research, providing small grants to keep her work moving forward, including awards from the National PKU Alliance, the Mid-Atlantic Connection for PKU and Allied Disorders and the Tennessee PKU Association.

"Their support tells me how important this work is — how important it is to find a way to improve the PKU diet," says Ney. "Receiving this FDA grant is a win for the whole PKU community."

# Nutritional Sciences Digest

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These opportunities are possible  
because of our alumni and donors.  
Thank you for contributing to our  
continued success!*

## Position Opening: Associate/Assistant Professor

The Department of Nutritional Sciences is seeking a qualified Associate/Assistant Professor. Interested candidates should have a Doctoral degree in nutrition, public health or a related field and preferably be registered as a Dietitian.

The major concentration of the position is on extension activity with a minor focus on research and instruction.

Please see the listing in the Office of Human Resources:

[www.ohr.wisc.edu/pvl/pv\\_071578.html](http://www.ohr.wisc.edu/pvl/pv_071578.html) for additional info about this position and how to apply.

*UW-Madison is an equal opportunity/affirmative action employer. We promote excellence through diversity and encourage all qualified individuals to apply.*



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