USA Today & The Princeton Review ranked UW-Madison as one of the best value colleges of 2014 and we are also proud to be one of the best graduate programs in the nation!

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: student-staff@nutrisci.wisc.edu

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Follow a student Badger as she prepares and goes on a field experience (Agriculture, Health and Nutrition in Uganda):

wibadgertravels.wordpress.com

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Note from the Chair

Another semester is quickly coming to an end and the cold weather is arriving. Although time seems to fly by, the mission of the Department of Nutritional Sciences remains the same. We strive to generate and disseminate knowledge regarding diet and nutrition to help improve the health and economic development of current and future generations through our combined efforts in undergraduate and graduate education, research, and extension to foster an educated society. In this issue of our newsletter, we feature individuals who have graduated from our programs and are working to further the field we all value. We also highlight the accomplishments of the great individuals that are currently in the Department of Nutritional Sciences.

Our talented faculty, staff, postdocs and graduate students dedicate themselves to fostering an educated society by conducting original research in nutrition topics ranging from molecules to communities.

We have national and international reputations as leaders in nutrition/metabolism (energy utilization, zinc, selenium, iron and vitamin A); health and disease (phenylketonuria, cystic fibrosis, fetal alcohol syndrome, obesity, gastrointestinal physiology), and community/policy applications (gardening programs to improve youth energy balance, a program to improve nutritional health of college-age adults, coalition-led interventions to improve community nutrition environments). These exciting programs are funded by grants from the National Institutes of Health, USDA and Gates Foundation.

We pride ourselves on our collaborative efforts in research, teaching and extension. The Undergraduate Certificate in Global Health also brings new partnerships across campus and the world. The number of students getting involved in this program is increasing with time. Requirements for the certificate include field experiences offered in Wisconsin and the United States as well as Ecuador, Uganda, China and Sri Lanka. We are proud to be one of the top five graduate programs in the nation. In addition, we have one of the largest undergraduate programs in the College of Agriculture and Life Sciences.

With one of the best graduate programs and such a large undergraduate program, we are pleased to welcome a new addition to our excellent faculty. Dr. Brian Parks from the University of California-Los Angeles will be joining our department in August 2015. We are excited to welcome such great talent to our community of faculty, staff, and scholars.

I am proud of the network of alumni, students, friends, faculty and staff who contribute to the success of our programs. As you may know, our Department is housed within a building that allows for our work to continue, but does not provide adequate space to grow. We are currently looking at plans for a building expansion that would accommodate our needs and requirements going forward. I ask you to consider donating to our Department in order to help us achieve this goal. Thank you for all the support and I can’t wait to see what the future holds.

James Ntambi, Department Chair
It is my love of learning new things that has carried me all the way to UW-Madison. I’m originally from Virginia, so my education has slowly carried me westwards beginning with undergraduate degrees in psychology and chemistry from Radford University in Virginia to a PhD in molecular and developmental biology from the University of Cincinnati in Ohio, and now a traditional academic post doc in the Nutritional Sciences department.

My previous research experience has been limited to the brain and development of behavior and cognition after teratogen exposure. My doctoral dissertation used rats to approach investigative questions regarding the neurotoxic effects of too much manganese in the brain during development. This is becoming an important question as it realized that children develop deficits in a wide range of behavioral and cognitive issues after exposure. I exposed my rats in early postnatal life, gavaging high levels of Mn during the lactation period. These rats were then found to have several behavioral and cognitive deficits at both young adult and adult time points.

Specifically, these rats were behaviorally hypoactive, had a decreased startle response, decreased social interaction, and exhibited anhedonia. These pups were also deficient at adult ages in two different tests of cognitive ability: the Morris water maze (MWM) and the Cincinnati water maze (CWM). The MWM is related to hippocampal function, but successful performance in the CWM is striatally dependent. That Mn neurotoxicity affects both regions of the brain is a novel finding; I corroborated these deficits with more traditional benchwork techniques. Using electrophysiology, I showed that response to a tetanus stimulus was depressed in hippocampal slices of Mn animals compared with vehicle gavaged controls. Also in the hippocampus at ages concurrent to cognitive testing, α-synuclein was upregulated suggesting damage to the hippocampus after Mn overexposure. Our model caused excessive dopamine in the rat striatum at younger ages compared with controls, suggestive of an excitotoxic mechanism during development. This is particularly true since there were no changes in tyrosine hydroxylase protein via Western blot at adult ages suggesting that dopamine metabolism was unaltered in the long term due to Mn exposure.

However, I was also interested in how environment and nutrition could play a role in the variability seen in the effects of toxicant exposure. In particular, I noticed that Mn toxicity occurred in communities that experienced socioeconomic stress and iron deficiency and wanted to investigate how these factors might exacerbate Mn toxicity. I created a rat model combining this tripartite exposure during development and used it to investigate both behavioral and cognitive changes in these animals. This entailed modifying both an iron deficiency and developmental stress paradigm. This was also followed up with neurotransmitter quantification and some quantification of enzymes involved in neurotransmitter metabolism. I found that iron deficiency often exacerbated the neurotoxic effects of manganese overexposure, particularly in behavioral assays. Incidentally, my developmental stress model caused both behavioral and cognitive deficits, but seemed not to affect Mn neurotoxicity.

These results caused me to start thinking outside the brain, so to speak. So I am here to learn the answers to my questions regarding nutrition and development. How does nutrition affect long term development and what happens when children don’t get the nutrients they need? How does appropriate or inappropriate nutrition affect toxicant exposure? To that end, I’ve joined Susan Smith’s lab and am working on a project regarding prenatal ethanol exposure and later life obesity and metabolic syndrome. I love this project because I’m learning about nutrition and metabolic pathways and how they are affected by alcohol, but also because I’m learning now, more than ever, that everything in the body, brain and all, is interrelated and intertwined. And I can’t wait to get in there and untangle it.
My name is Jayne-Norah Ntambi and I am an ongoing undergraduate junior majoring in Nutritional Sciences at the University of Wisconsin-Madison. My path toward choosing Nutritional Sciences was trying yet overall solidifying. As a freshman, I came in with the mentality of pursuing some form of biological sciences, with keen eyes on nutritional sciences. Funny enough, as a freshman the main topic of conversation is “what is your major?” At first, I was okay with saying, “I am not sure, but I want to do something that has to do with science.” As time wore on, my indecisive outlook was starting to affect my studies. I began to think about why I was in the classes I was taking and whether or not I felt as though they were useful to my future goals. I did not want to close any doors on the many opportunities our University has to offer; however, at the end of the day finding a focus can help drive passion for what you are learning. With great deliberation and contemplation, Nutritional Sciences was the only field that seemed to spark real enthusiasm; not only in how I envisioned the future but also with the courses I would be taking. Nutrition is an indispensable issue all around the world and it comes in many shapes and forms. Once I have received my undergraduate degree in Nutritional Sciences, I hope to apply to medical school followed by returning to Uganda where my family is from. In Uganda, I plan to continue to advocate for nutrition as a vital part of both children and adult health and start a clinic that focuses on the treatment of all kinds of malnutrition as well as over-nutrition, which is an increasing problem in Uganda.

I have spent the majority of my life in Madison and I have grown very fond of the city. In my free time, I enjoy spending time with my family and friends, visiting the terrace, practicing yoga, and forming new connections with the unique personalities I meet around Madison. As a student majoring in Nutritional Sciences, I work in a medical sciences lab run by Dr. Michael MacDonald. Here, the research focuses on the genetics behind type 1 diabetes in children with an emphasis on the metabolic pathways of the pancreatic islet beta cells. Within the MacDonald lab, I have been assigned a small portion of the lab’s overall research where I search for common enzymes found in the DNA of children inflicted with type 1 diabetes. It is the first time I have truly enjoyed research mainly due to the fact that I have a strong understanding of the experimental procedures and the meanings of outcomes.

If I were to recommend a class to a new student, I would recommend taking Entomology 201 taught by Professor Walter Goodman. It is known as a low stress science course where each lecture is intriguing and the students get the opportunity to raise a moth from its egg stage to adulthood. It is a course that has some challenges, but the firm attention to in-class interaction is a fresh approach in comparison to most science courses here at UW Madison. If I were to leave a piece of advice to other students it would be: keep an open mind as a means to find where your passion lies and do not let anyone deter you from where you envision yourself in ten years. Academics are crucial, not only to our overall success, but also imperative to the benefit of our society. As my father has always said to me, “Always take your schooling seriously because once you have earned it, it is something no one can take away from you.”
Welcome New Graduate Students!

Adrienne Cheng earned her Bachelor’s in Environmental Biology and her Master’s in Environmental Health and Toxicology from University of Michigan-Ann Arbor. She is interested in toxicology research on the role of plasticizers on the female reproductive system.

Lyanne Chin graduated from McGill University with a Bachelors in Dietetics. She is interested in maternal and child nutrition, especially maternal health pre-pregnancy and the impact on fetal health.

Rachel Fenske earned her Bachelors in Biology at UW-La Crosse. She is interested in the impact of diet on chronic disease treatments and diabetes etiology/treatments as well as etiology of GI diseases such as celiac disease.

Kiersten Olsen graduated from UW-Madison this past May, majoring in Nutritional Sciences with a certificate in Global Health. She has been in Dr. Sherry Tanumihardjo’s lab focusing on Vitamin A assessment for a little over two years now. As a graduate student, she is continuing a project that she started last semester on the Cargill-Benevenga Grant working on how vitamin A status affects bone health.

Julie Patterson graduated from University Illinois-Chicago with a Bachelor’s in Human Nutrition and Dietetics, with honors, and has a Master’s in Business Administration in Marketing with distinction from DePaul University. Julie has been a Registered Dietitian for 10 years and worked in Clinical Nutrition Management for 5+ years. As a Nutritional Sciences PhD student at UW Madison her area of research is breastfeeding.

Michael Schaid graduated from the University of Minnesota-Twin Cities with a Bachelor's in Biochemistry. He studied sarco/endoplasmic reticulum calcium ATPase interaction in muscle tissue.

Rachel Taylor is from Ann Arbor, MI and completed her undergraduate work here at UW-Madison in the Department of Animal Sciences. She will be working on selenium regulation and requirement in turkeys.
Welcome Dr. Brian Parks

Dr. Brian Parks will join the Department of Nutritional Sciences in August 2015. Dr. Parks received his Ph.D. from the University of Alabama-Birmingham where he studied inflammatory mechanisms in atherosclerosis and lipid metabolism. He is currently a Postdoctoral Fellow at the University of California-Los Angeles. His research bridges genetic, computational and biochemical approaches to understand how genes and environmental factors, such as high-fat and high-sugar diets, contribute to obesity and diabetes. His lab at the University of Wisconsin will work on systems genetics approaches to evaluate gene-diet interactions and novel genes influencing obesity and diabetes. His work has been featured by national news media and is currently funded by an NIH Pathway to Independence Award. He will be joined in Madison by his wife, Abigail and daughter, Rebecca.

Combined Capstone Certificate/Dietetic Internship Program

The Department of Nutritional Sciences is pleased to announce a formal collaboration between our new graduate-level online Capstone Certificate in Clinical Nutrition program and the University of Wisconsin Hospital & Clinics (UWHC) Dietetic internship. Beginning in June 2015, students admitted to the UWHC Dietetic Internship will complete the Capstone Certificate courses at UW-Madison in coordination with their supervised practice experiences. The combined program is completed over 1 year and graduates receive 18 graduate-level credits that can be used toward a Master's degree.

This new program provides the skills and knowledge needed by the next generation of nutrition professionals combining applicable online graduate nutrition courses with best-practice guidelines over three semesters. Applications are accepted once a year (due in mid-February) through the Dietetic Internship Centralized Application System (DICAS) and the program begins in June. Twelve students will be accepted into the program each year.

The current “stand alone” Capstone Certificate in Clinical Nutrition program will continue, as well. Students with a Bachelor’s degree may apply to this 12 credit online graduate-level program in any semester. It is designed to provide graduate credits toward a Master’s degree for dietetics professionals, dietetic interns, and graduates of dietetics programs who wish to improve their chances of obtaining a Dietetic Internship.

Both programs provide important graduate-level credit that can be transferred to applicable graduate programs – an important consideration for the future. Beginning in 2024, a minimum of a graduate degree will be required for entry-level registered dietitian eligibility.

The Department of Nutritional Sciences is pleased to be able to collaborate with such an outstanding Dietetic Internship program and welcome the participation of the distinguished RDs at UWHC!

Grandparents University 2014

Grandparents University is an annual program during the summer that brings grandparents and grandchildren ages 7-14 from across the country to the University of Wisconsin-Madison campus. Attendees have the opportunity to explore a “major” under the direction of top faculty and staff members. At Nutritional Sciences, participating grandparents and their grandchildren learned about nutritious diets and even made smoothies.
Nutritional Sciences Seminar Series Features NIH Representative

By Amber Heiden

Every Thursday at 11 am during the fall and spring semesters, the Department of Nutritional Sciences holds a seminar series, inviting faculty from across the campus and special guests to discuss their work as it relates to nutritional sciences. On November 13, Dr. Sheila Fleischhacker, a policy advisor from the National Institutes of Health (NIH) Division of Nutrition Research Coordination (DNRC), briefed seminar attendees on the state of federal human nutrition research and also highlighted some of her work with Native American tribes and their well-being.

Her role at the NIH is working to discover and fill nutrition research gaps that could improve the health disparities and the prevalence of preventable chronic diseases. She did not expect to be on this path when she was completing her dissertation in nutritional sciences at Pennsylvania State University, but she was inspired by her work with nutrition in an inner-city Head Start where conditions were far from ideal.

“I had a strong desire to understand how to make and evaluate law and policy that promote health, prevent nutrition-related chronic diseases and uphold social justice.”

Dr. Fleischhacker followed this calling and now has a degree in law (JD) and a Ph.D in nutritional sciences. She has built experience of using policy and environmental strategies in neglected populations, such as the Native American tribes.

“Native youth, families and communities face some of the highest rates of obesity in the world,” explains Dr. Fleischhacker. She feels lucky to have worked in The American Indian Healthy Eating Project and the Healthy Native North Carolinians Network, which both focus on advancing active living and healthy eating among Native American communities using tribally-led community changes.

“Tribal leaders have been and can use tribal law, policy, resolutions, programmatic and budgetary decisions,” she states, “to foster active living and healthy eating among their communities—from childcare centers to tribal schools to community-level infrastructure.”

While discussing her experiences in the community and role in health and nutrition research, Dr. Fleischhacker stresses the importance of collaborating with other fields and finding solutions to critical global issues.

“Students should strive to not just understand another field’s language, tools and paradigms but focus more on how to learn new fields when and as they need to and how to engage in solution-oriented, cross-disciplinary dialogue.”

She is excited to see students “thinking outside their toolbox” to answer big questions about health promotion, and public acceptance of creative solutions to improving community health.
Five Things Everyone Should Know About... Gluten

By Beth Olson

This article was obtained through the College of Agricultural and Life Sciences from the Summer 2014 issue of Grow, Wisconsin’s Magazine for the Life Sciences.

1. What is it?
Gluten is a substance composed of two proteins—gliadin and glutenin—that are found in the endosperm (inner part of a grain) of wheat, rye, barley and foods made with those grains, meaning that gluten is widespread in a typical American diet.

2. Is it harmful?
People who suffer from celiac disease, an autoimmune digestive disorder, are unable to tolerate gluten. Even a small amount of it (50 milligrams) can trigger an immune response that damages the small intestine, preventing absorption of vital nutrients and potentially leading to other problems such as osteoporosis, infertility, nerve damage and seizures.

3. How widespread is celiac disease?
An estimated 1.8 million Americans have celiac disease; as many as 83 percent of those suffering from it remain undiagnosed or are misdiagnosed with other conditions. Another 18 million (about 6 percent of the population) do not have celiac disease but suffer from gluten sensitivity. They report such symptoms as diarrhea, constipation, bloating and abdominal pain—which also are symptoms of celiac disease—but do not experience the same intestinal damage. For those with celiac disease or gluten intolerance, a gluten-free diet is beneficial.

4. Should you cut gluten from your diet even if you don’t have these conditions?
Probably not. Restriction of wheat in the diet often results in a decrease in the intake of fiber at a time when most Americans consume significantly less than the recommended amount. Low-fiber diets are associated with increased risk of several acute gastrointestinal diseases (examples: constipation, diverticulosis) and chronic diseases such as heart disease and colon cancer. If not done carefully, gluten-free diets also tend to be low in a number of vitamins and minerals.

5. Don’t diagnose yourself.
The broad range of symptoms associated with celiac disease and gluten sensitivity may be due to other causes; self-diagnosis and treatment of perceived gluten intolerance may delay someone from seeking more appropriate medical care. The only way to know for certain if you have celiac disease is from a blood test for the presence of specific antibodies followed by a biopsy of the small intestine. If you are experiencing the symptoms described above, please seek medical care.

Beth Olson is a professor of nutritional sciences. Her principal research areas concern breastfeeding support and improving infant feeding practices in low-income families.
The Dietetics and Nutrition Club Shares Their Passion for Health

by Amber Heiden

The Dietetics and Nutrition Club (DNC) at UW-Madison provides students many opportunities to pile their plates with experiences in outreach, networking, and career planning. DNC members encourage others to eat healthier by planning events and presentations for a wide variety of audiences.

Every two weeks, the DNC gathers anywhere from 50 to 100 members in the Student Activity Center’s Caucus Room to listen to guest speakers or have a group discussion on current topics in nutrition, such as paleo diets or being gluten free. Membership costs only seven dollars per semester and students who participate can get a healthy dose of experience and networking in a field in which they all have a common interest.

“As an organization we have a lot to offer fellow students on campus and to individuals in the surrounding community,” states Alyssa Stiles, a DNC board member.

DNC members choose to share their knowledge and enthusiasm for health both on campus and off. Three committees, chaired by two board members each, split up club activities.

Club Committee
Chaired by Alyssa Selk and Maria Gruetzmacher

- Networking between members and career planning
- Socials, such as the ice cream social at Memorial Union or Slow Food at The Crossing
- Apparel

Community Committee
Chaired by Alyssa Stiles and Jane Petr

- Nutrition posters on public boards
- Presentations to off-campus groups, like at the Leopold After School Nutrition Program with Americorp and REAP
- Informational Dietetic and Nutrition handouts

Campus Committee
Chaired by Pady Doroocchi and Makayla Emmer

- Nutrition posters at SERF and UW basketball games
- Presentations to campus groups about the importance of healthy eating
- Healthy Handouts

The events are planned and executed by the committee members, but any DNC member can volunteer at Slow Food, help give a presentation at a school, or just have a good time at the socials with other DNC members. The club’s largest event of the year is Dinner for Dietitians, planned for February this year, is a member favorite.

“We invite a handful of dietitians from schools, grocery stores or hospitals,” explains DNC board member Alyssa Selk. “We cook the meal. They come in and speak about how they got to where they were so all of our members are able to see different paths in dietetics. Everyone loves that event.”

To learn more about the UW-Madison Dietetics and Nutrition Club and their upcoming events, you can visit their Facebook page or their student organization page (https://win.wisc.edu/organization/dnc).

Photo on left: DNC at their ice cream social at the Memorial Union Terrace

DNC at the fall student organization fair
In Memoriam - Emerita Alcantara, Ph.D

UW-Madison Nutritional Sciences alumnus Emerita Alcantara, Ph.D, passed away on May 28, 2014, at the age of 71. Dr. Alcantara earned her M.S. from the UW’s Department of Foods and Nutrition in 1967 and her Ph.D from the Department of Nutritional Sciences in 1970. Dr. Alcantara was a long-time industry nutritionist who believed in the importance of science-based nutrition education. She worked at the Division of Nutrition Research in the National Dairy Council (NDC) as Vice President for Nutrition Research. Her coworker, Judy Brun, who was Vice President for Nutrition Education, stated that Dr. Alcantara “strongly believed in the importance of accurate, science-based nutrition information as disseminated to the public through educational programs, and spent her career making this happen.”

In Memoriam - Mary Eileen Matthews, Ph.D, R.D.

UW-Madison Food Science professor emerita and Nutritional Sciences alumnus, Mary Eileen Matthews, Ph.D, passed away on July 11, 2014 at the age of 76. Dr. Matthews joined the faculty of Department of Food Science in 1970. Dr. Matthews was known for her work in food service management, food safety, and systems modeling. She retired as professor emerita, after 25 years and moved to Boca Raton where she enjoyed her retirement.

In Memoriam - Robert Schilling, M.D.

Beloved alumnus, professor and Wisconsin Medical Alumni Association co-founder Dr. Robert Schilling (MD ’43), passed away at his home September 30, 2014. Dr. Schilling is considered an icon by his colleagues and former students for his outstanding teaching and research accomplishments. He graduated from the UW School of Medicine and Public Health in 1943 and joined the faculty in 1951. He served as the chair of the Department of Medicine from 1964 to 1971. Until his death, Dr. Schilling was an active member of the Wisconsin Medical Alumni Association, which he co-founded in 1956. He served as class representative for his class of 1943 for many decades.
CALS Nutritional Sciences Awards Recipients

**Ada Holt Lorenz Award:** Carmen Grindrod  
**Albert J. & Adelaide E. Riker Academic Merit Award:** Kaitlyn Sacotte  
**Albert J. & Adelaide E. Riker Scholarship:** Rachel Mersberger  
**Anna L. Rowe Scholarship:** Miranda Winkelman  
**Beulah Dahle Scholarship:** Faith Blair, Sierra Kirby, and Katarina Spelter  
**CALS Centennial Academic Merit Award:** Andreanna Kinnart  
**Daughters of Demeter Outstanding Junior Scholarship:** Camille Swan  
**Daughters of Demeter Outstanding Sophomore Scholarship:** Laura Herzog  
**Dorothy Strong Scholarship:** Casey Haas, Sierra Kirby, Maisie Schelvan, Katarina Spelter, and Jennifer Wolf  
**Ferdinand Plaenert Scholarship:** Macy Barnes and Gabriella Recob  
**Hattie B. Goessling Nutritional Science Scholarship:** Elaina Jones, Grace Jones, Maisie Schelvan, Camille Swan, Talia Tyler, Alexandra Uribe, and Yeya Zheng  

**Henry Steenbock Scholarship:** Mackenzie Dutton and Jackson Moran  
**Karen Spector Memorial Scholarship:** Danielle Felber  
**Kathleen E. McCarthy Dietetics Scholarship:** Rachel Mersberger  
**Lawrence M. Weyker Career Development Scholarship:** Makayla Emmer and Jackson Moran  
**Peter Young Student Assistance Grant:** Carmen Grindrod  
**Robert Bjorklund LSC Scholarship:** Jennifer Wolf  
**Ruth & Carl Miller Academic Merit Award:** Taylor Brockman, Maura Johnson, Katie Osterbauer, Camille Plesha and Kaitlyn Sacotte  
**Sadie & Richard Delwiche Scholarship:** Alison Gruen  
**Tanya Rand Quest Scholarship:** Alison Gruen  
**WALSAA Outstanding Sophomore Award:** Maria Gruetzmacher and Jayne-Norah Ntambi  
**Walter H. Ebling Scholarship:** Faith Blair  
**Wisconsin Rural Opportunities Foundation Award:** Emily Held

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