



# NUTRITIONAL SCIENCES DIGEST

EST. 1969

**DEPARTMENT OF NUTRITIONAL SCIENCES  
UNIVERSITY OF WISCONSIN-MADISON**

SPRING 2024 Edition

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# David Eide

Professor and Chair of the Nutritional Sciences  
Department retires after 20 years



Dr. David Eide is a Professor of Nutritional Sciences, with a Bachelor of Science degree from the University of Minnesota in 1981 and a Doctor of Philosophy degree from the University of Wisconsin-Madison in 1987. His research interests lie in the fields of nutritional genomics and molecular responses to changes in nutrient status.

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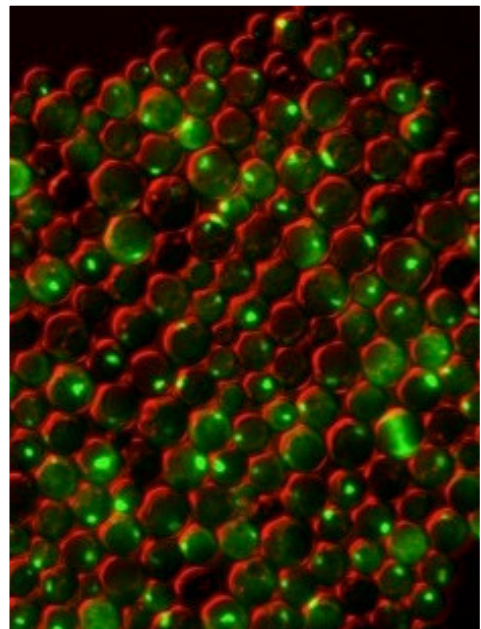
I've been proud to serve the department as its chair for the past nine years. We've achieved many things and elevated the department to a new level in the college. Being a department chair is challenging but it is very rewarding to help in the success of the faculty, staff, and students.

- David Eide

”

**What would you consider as the most significant breakthroughs or accomplishments of your career?**

One accomplishment of my career that has had the greatest impact on my field of mineral nutrient metabolism was the discovery of the IRT1 iron transporter from the plant *Arabidopsis thaliana*. This was work I did in collaboration with Mary Lou Guerinot at Dartmouth College. The reason this discovery was important to the field was that IRT1 was the first identified member of a ubiquitous family of metal ion transporters that play roles transporting iron, copper, zinc, manganese, and other metals. From IRT1, we went on to discover related transporters in fungi, bacteria, insects, fish, and in mammals.



*Disrupted protein homeostasis in zinc-deficient cells*

For example, the ZIP4 protein in our small intestine is responsible for uptake of dietary zinc, is a close relative of the IRT1 protein, and its role in zinc transport was quickly recognized because of our prior work on the plant protein. With regard to impact on my lab and research, the discovery of IRT1 led us to identify two related transporters in yeast called ZRT1 and ZRT2 that are responsible for zinc uptake in that organism. Studying those proteins and how they are regulated opened up a whole new world of discoveries into how cells transport and move metal ions around within them, novel mechanisms of metal sensing and control of gene expression, and a wide array of strategies that cells use to adapt to and grow when faced with zinc deficiency.

**What strategies do you believe have been most effective in fostering learning among your students?**

My primary instructional role was in NS 510 Nutritional Biochemistry and Metabolism. This course was a joy to teach because it's so easy to connect the biochemistry and molecular biology directly to issues of human health. For example, the pathways for one-carbon metabolism get a lot more interesting to a student when you present it in the context of chemotherapy and the development of anti-tumor drugs that disrupt those pathways. Examples like that can be found throughout the material in NS 510. By connecting nutritional biochemistry to real-world issues like cancer treatment, you grab the student's attention so they want to learn the material and not just feel like they have to learn it for the exam.



**Do you have any advice for aspiring researchers and educators in the field of nutrition?**

Perseverance was probably the key to what success I've had in research. When I was just starting out as a postdoc and new faculty member, a lot of research avenues we went down didn't really pan out. That we could recognize when things weren't leading us to new discoveries and then move on to new things has been a successful strategy. A related lesson I've learned over the years is that a hypothesis is just a tool; when it stops working, throw it out and get another.

Too often we get overly committed to our ideas of how something works in the cell or organism and it can be hard to let those ideas go when experiments show them to be wrong. This is a very human tendency because negative results aren't publishable in most journals and we need hypotheses to be supported by experiments to publish. The lack of appreciation of the value of negative results is a problem in science today.



*The Eide Lab in California (2018)*



**Do you have any personal goals for this next chapter of your life?**

I've always had a lot of interests outside of research and teaching and I look forward to focusing more on those. My hobbies include sailing, biking, kayaking, skiing, camping, music, and reading and I look forward to doing them all in the coming years. My wife and I are about halfway through completion of hiking the ~1200 miles of Wisconsin's Ice Age Trail and I look forward to finishing that goal as well. I'm also interested in auditing classes on campus; I especially love history and geology.

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# SLOW FOOD UW

GOOD, CLEAN, AND FAIR FOOD FOR ALL

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## Co-Executive Director

CELESTE KIM

I am currently the Co-Executive Director of Slow Food UW. I started off as a cafe intern and then became cafe director before taking over as Co-Exec. As an intern, I worked in the kitchen preparing and serving the meals. As the cafe director, I became more involved in recipe planning, scaling, and managing the meal services along with continuing to do prep work. I became involved with Slow Food UW through some friends who were in the organization who knew that I loved cooking and recommended that I should join them! I really cherish the memories that I've made with them through this organization before they graduated.

Within the context of the UW-Madison chapter, we try to provide affordable, accessible, sustainable, and delicious food to the UW-Madison and Madison community through our meal services and to spread mindful food practices through our nutrition education. We pursue our mission by partnering with local farmers, schools, and the community and promote inclusive and sustainable practices. The phrase, "good, clean, and fair food for all" can be broken down word for word as each part of the mission addresses different aspects of Slow Food. **Good** because it is healthy in addition to tasting good; **clean** because it is produced with low environmental impact and with animal welfare in mind; and **fair** because it respects the work of those who produce, process, and distribute it.





### How does Slow Food at UW-Madison engage and involve undergraduate students in its activities and initiatives?

We host two meal services every week for the public and our location is right at the heart of campus. This allows for students to easily stop by for a meal with their friends or to come and meet new friends! We also have volunteer opportunities open at our meal services weekly to help prepare and serve the food. If someone wants to become more involved with the planning of our meals and other activities, like sourcing, education, finance, and communications, then we have our internship applications open up at the end of every semester for the following semester. Both are great ways to get involved with the UW community and aid sustainability and food accessibility efforts on campus!

*good food,  
volunteering, and  
even internships!*



Follow @slowfooduw  
on Instagram!



**What kinds of projects or activities does Slow Food at UW-Madison typically organize or participate in? Are there any upcoming events that you'd like to promote?**

We typically host meal service collaborations with other student organizations in order to promote religious and cultural holidays or events. For example, we hosted a Black History Month dinner with Chef Yusuf Bin-Rella and Wisconsin Union Directorate where Chef Yusuf's recipes were served for the Slow Food Family Dinner Night meal service! We were able to present Chef Yusuf's Afro-Indigineous cuisine to the community while providing historical and cultural background on the dishes. Also, we have had other meal services celebrating the holidays of Holi and Passover and creating menus inspired by foods eaten during those holidays! For Holi, we served chana masala, samosas, naan, kheer, and chai. For Passover, we served matzo ball soup and matzo crack.

We have previously collaborated with the UW student org QTPOC (Queer Trans People of Color) and the multi-cultural sorority Sigma Lambda Gamma to host meal services celebrating Middle Eastern North African Heritage month and Women's History Month. We host these meal services every week on Monday nights and Wednesdays at noon and I would encourage everyone to come to try some great food that you may typically not find in restaurants in Madison! We post all of our times to our instagram (slowfooduw).



My ultimate goal for myself before I graduate and Slow Food UW is to host a cultural cuisine street fair event for the UW community and for it to be a collaboration with many different multi-cultural student organizations! So keep a look out for that during the spring semester as well!





**What are some of the benefits and learning experiences that students can gain from being a part of Slow Food?**

There is so much to learn from being a part of Slow Food UW and I genuinely believe that being in this organization has made me a more well rounded person. From just volunteering, one can learn about the impact of sustainable and locally sourced food, learn how to prepare and cook different types of ingredients and cuisine, and learn how to effectively work with a team to accomplish a common goal. If someone decides to become more involved and commit to an internship with us, then they can expect to learn more indepth about local food systems and Slow Food's role in it, disparities within food access, how to plan for large scale meals, and how to collaborate with other organizations and your own Slow Food team in order to serve our community! There are many opportunities to move up into leadership roles within Slow Food that will be beneficial for many students in order to navigate the world outside of campus.

**Can you highlight any successful or impactful projects or initiatives that Slow Food at UW-Madison has undertaken in recent years?**

When I came into a director position, I started the Diversity, Equity, Inclusivity, and Sustainability initiative with a few of the other directors to create a safe space on campus for marginalized student groups, such as students of color and queer students. Slow Food had previously been considered a whitewashed organization and our food is catered towards a certain demographic, perpetuating a reputation that discourages inclusivity. As a student of color, I wanted to create another safe space on campus to facilitate connection, friendship, and appreciation of different cultures and identities thus starting the DEI&S initiative. We strive to educate all our interns on intentional and mindful language and practices and emphasize using our resources and connection to food to foster a supportive and inclusive environment.

We pursue our mission by creating menus that are inspired from a variety of different cultural cuisines while checking for authenticity. We also have a specific DEI intern to promote and educate our interns on mindful practices, and collaborate with multicultural organizations in order to host meal services and events that reach a wider breadth of the student body.



**What advice or insights would you offer to undergraduate students interested in getting involved with Slow Food or pursuing similar initiatives related to food sustainability and nutrition?**



My advice would be to take the leap and get involved with an organization or initiative even if you don't know much about it. Trust your ability to communicate with others on your team and trust that you are competent at learning new things. When I first joined Slow Food, I just wanted to cook more food and now I have gradually learned and become educated on racial disparities within food systems and how to promote equitable and inclusive practices within our community. Don't be afraid to pursue things alone and learn to be comfortable with being uncomfortable as that will facilitate growth and confidence within yourself.



# AWARDS & ACKNOWLEDGMENTS

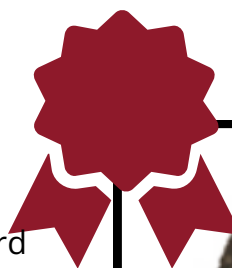


## *Erica Phillips*

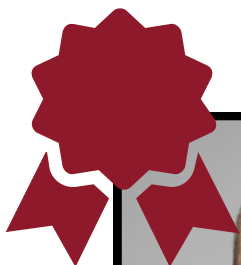
Erica Phillips, PhD, won the 2024 Krishna Ella Global Innovation Award. This award seeks to catalyze “5i” projects led by CALS faculty and staff. 5i partnerships and projects are ones that are international, interdisciplinary, inclusive, innovative, and integrated (includes at least two of research, education, and outreach). Proposed activities should ideally lead to the development or advancement of a funded or self-sustaining project.

## *James Ntambi*

James Ntambi, PhD, won the 2024 Global Research and Outreach (GRO) Award. This award seeks to advance sustainable agriculture and the life sciences through a focus on food systems decarbonization, water sustainability, novel agronomic systems, feeding the world through plant biology, promoting healthy aging through gut microbiome & nutrition, and preventing vector-borne diseases. Ntambi aims to use the award funds to distribute "sack gardens" and address nutrient deficiency in Uganda.



# AWARDS & ACKNOWLEDGMENTS



## *Christopher Davis*

Chris Davis, MS, received the 2024 Academic Staff Excellence Award. Davis is an instrumentation Technologist in the Department of Nutritional Sciences. The CALS annual awards recognize and celebrate the people who have led the efforts and contributed to the accomplishments of our college. Davis has dedicated a lot of time working in Sherry Tanumihardjo's lab, providing technical and managerial support on projects investigating the efficacy of interventions targeting vitamin A deficiency in at risk populations.

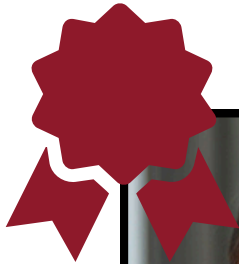
## *Eric McGregor*

Eric McGregor is a recipient of the Louis and Elsa Thomsen Wisconsin Distinguished Graduate Fellowship. This fellowship aims to support graduate students who demonstrate excellence in research. Eric is a PhD candidate in the Nutrition and metabolism Program. His research focuses on the metabolic control of brain metabolism by adiponectin receptors signaling aging.





# AWARDS & ACKNOWLEDGMENTS



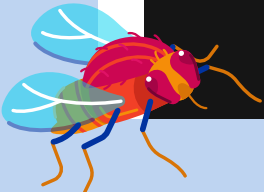
## *Jing Fan*

Jing Fan is a recipient of the Vilas Faculty Early Career Investigator Award. Fourteen professors received Vilas Faculty Early Career Investigator Awards, recognizing research and teaching excellence in faculty who are relatively early in their careers. The award provides flexible research funding for three years.

## *Joshua Jast*

The CALS Senior Awards for Excellence in Academics, Leadership, and Service recognize students for their scholastic performance, leadership, and service. In addition to their outstanding academic performance, these students demonstrate remarkable records of both campus and community engagement. Students who have at least a 3.75 grade point average and are graduating in the 2024 calendar year were invited to apply. Out of 60 applicants, seven students were selected to receive awards.





# Development in Fertility Research Questions Obesity as the Leading Cause of Infertility

By Isabella Moussavi

\*This is an article from  
the Morgridge Institute  
for Research\*

A project on high-sugar diet spearheaded by scientist  
Rodrigo Dutra Nunes in Daniela Drummond-  
Barbosa's lab opens the door for breakthrough  
advancements in fertility research.

In a recent study published in the journal Development, Dutra Nunes and Drummond-Barbosa's research uniquely analyzes the effects of a high sugar diet, obesity and water intake on metabolism, oogenesis and fertility in *Drosophila melanogaster*, otherwise known as the common fruit fly.

"One of the novelties of this paper is that we didn't only show that a high-sugar diet reduces the fertility of flies, but we also showed which steps of oogenesis are affected, and which process in each step is being affected," says Dutra Nunes. Existing studies do not distinguish between the effects of a high-sugar diet and obesity, which makes it difficult to investigate the underlying cause behind decreased fertility.

"We were able to dissociate the effects of obesity and high sugar and show that obesity is not what causes the reduction in fertility," adds Drummond-Barbosa. "This highlights the importance of carefully

separating the contributions of diet versus obesity in future studies not only in fruit flies but also in mammals."

Dutra Nunes notes that there is a high degree of similarity between the genes in flies and in humans, so *Drosophila* can provide an excellent model for experiments that are challenging or not feasible to conduct on humans, such as genetic manipulation or diet alteration.

"Fruit flies offer major advantages as we progress towards identifying the cellular and molecular mechanisms underlying the effects of a high sugar diet," adds Drummond-Barbosa. "The powerful genetic tools available, fast generation time, and large sample sizes make it possible to combine cutting edge research with high scientific rigor."

Dutra Nunes and Drummond-Barbosa compared reproductive changes in *Drosophila* on a high-sucrose diet to that

of a control group without manipulation of the diet. In the experimental flies, fat storage quickly increased in one week, reaching much higher levels than in the control group.

An additional group of *Drosophila* were genetically altered to increase fat accumulation and model obesity on a normal diet. Fertility remained unchanged in these manipulated flies.

A resulting loss in egg production and hatching rates of female flies maintained on a high-sugar diet led Dutra Nunes and Drummond-Barbosa to conclude that a high-sugar diet, and not obesity, is the primary cause of female infertility.



They also observed an increase in death of developing germ cells at two distinct stages of oogenesis in the flies fed a high sugar diet.

“If you have some of the steps of oogenesis surviving less, that means you’ll have fewer eggs generated,” says Dutra Nunes. “That is what’s causing a decrease in fertility in flies.”

“The dietary supplementation of water to obese flies on a high-sugar diet was able to reverse the negative effects on fertility without changing the level of obesity.”

- Dutra Nunes

Apart from diet, Dutra Nunes also found that elevated water intake had a powerful metabolic effect counteracting high sugar consumption

The water supplementation also reversed the high glucose levels present in the bodies of flies on a high-sugar diet. Hydration’s healing reversal of reduced egg production provide a foundation for future studies to explore the relationship between water consumption, high glucose levels and fertility.

Dutra Nunes intends to explore under-researched elements and their roles in reproductive processes.

“We are now taking unbiased approaches such as proteomics and metabolomics to discover new points of connection between high glucose, water and other effectors of a high-sugar diet and test their effects on fertility,” he says.

He hopes that his research with Drummond-Barbosa might inspire further research into possible therapeutic interventions in humans to reverse some of the effects of the Western diet that are causing decreased fertility and other diseases.





# Chicken Detox Soup

A SPICY PERSPECTIVE

COURTESY OF MARY LOU KRASE

## INSTRUCTIONS:

Set a large sauce pot over medium heat. Add the olive oil, chopped onions, celery, ginger, and garlic. Saute for 5-6 minutes to soften. Then add the raw chicken breasts, broth, carrots, apple cider vinegar, crushed red pepper, turmeric and 1 teaspoon sea salt.

Bring to a boil, lower the heat, and simmer for 20+ minutes, until the chicken breasts are cooked through. Then remove the chicken with tongs and set them on a cutting board to cool.

Add the broccoli, peas, and parsley to the pot. Continue to simmer to soften the broccoli. Meanwhile, shred the chicken breasts with two forks, and stir it back into the soup. Once the broccoli is tender, taste, then salt and pepper as needed. Serve warm.

## INGREDIENTS:

- 1 1/2 pounds boneless skinless chicken breast
- 2 quarts chicken broth
- 1 large onion, *peeled and chopped*
- 3 cups broccoli florets
- 2 1/2 cups sliced carrots
- 2 cups chopped celery
- 1 1/2 cups frozen peas
- 1/4 cup chopped parsley
- 3 tablespoons fresh ginger, *shredded or grated*
- 4 garlic cloves *minced*
- 2 tablespoons olive oil
- 1 tablespoon apple cider vinegar
- 1/4 – 1/2 teaspoon crushed red pepper
- 1/4 teaspoon ground turmeric
- salt and pepper



# *Undergraduate Highlight*

## Isabelle Fuerst

**Major:** Nutritional Sciences and Dietetics

**Certificate:** Global Health

**Year:** Junior (Class of 2025)



### **Why did you choose UW-Madison?**

I chose Madison because of the many opportunities that are provided for students. UW-Madison is renowned for its academic programs across a wide range of disciplines. Not only is this school comprised of leading experts and scholars in their respective fields, but it is also known for the vibrant campus life. There are numerous clubs, organizations, and extracurricular activities made available to students with varying interests. This university being in the heart of Madison, WI, is surrounded by lakes, parks and beautiful buildings. When I saw how active and lively this campus was when I first came here, I immediately fell in love with it.

### **What sparked your interest in nutrition?**

I grew up being an athlete and was always conscious of what I was fueling my body with. I come from a family of home cooked meals and an emphasis on maintaining our health and wellness. I have always been interested and curious about how the body functions and the impact that different foods have overall on one's health.

I've always tried to optimize my health to the fullest to feel my best every day. Nutrition can be a very confusing topic, especially in this booming era of health-conscious individuals. I wanted to further educate myself on how nutrition truly plays a role in my body to help navigate the misinformation and controversies out there surrounding the topic of nutrition.

### **Is there anyone or anything that inspires you in your studies?**

Both of my parents inspire me tremendously throughout my studies. They have worked hard all throughout their lives while both being predominantly deaf. They have experienced certain challenges such as communication barriers, limited accessibility to auditory information, and lack of support services. Despite facing numerous adversities throughout their lives, they preserved and ultimately achieved many goals while becoming successful individuals. By witnessing my parents' determination and resilience, it has truly inspired me to be the hard working person that I am today.

### **Can you describe your work/research experiences?**

I participated in the Pierre Nutrition Lab which focuses mainly on the research of the gut microbiome, nutrition and intestinal physiology and disease. From a nutrition standpoint, we were mainly interested in the role of dairy products in supporting human health and nutrition further discovering the novel uses for these components in treating disease. The microbiome is complex with its diverse community of microorganisms that inhabit the gastrointestinal tract, which has provided us with much insight on the role it plays in our health and well being.

### **Have you done any volunteer work? If so, how has it impacted you?**

I am a volunteer through the “New Friends Program” which is based in the Wisconsin Alzheimer’s Institute, UW school of Medicine and Public Health. I work with a group of peers while being paired with individuals with mild cognitive impairment including alzheimer’s or dementia. We meet one-on-one every month and participate in fun activities. I have continued to develop skills in communication, empathy and patience. Being a part of this program has taught me a lot and further educated me on the misconceptions surrounding individuals with a cognitive disability. I always enjoy my time volunteering and am grateful that I came across this program!



### **What are your career aspirations?**

As I am strongly interested in the field of nutrition, I want to shine light on the importance of the role it plays in healthcare. I am pursuing the dietetics/pre-PA track and am inspired to further educate patients on ways they can manage and improve their own health and possibly prevent any predisposed diseases or illnesses one might have. By being conscious of fueling their body with the right foods and maintaining adequate nutrition, I believe it would transform their lives for the better. Upholding these habits can have profound effects on one’s physical and mental health, longevity and quality of life.

### **What do you like to do in your free time outside of school?**

In my free time I love to cook, try many new meals, and share new recipes I come across with friends and family. I also love trying new restaurants and different places around campus while being a “foodie” at my core. I visit the Farmers Market in the summer and fall frequently. I enjoy playing volleyball whether it's beach volleyball on a nice sunny day or indoors in the courts available at the gym. During the winter, I love to snowboard! I also love going on adventures outside with friends and overall being spontaneous!







# ***DNC UPDATE***

Dietetics and Nutrition Club  
President: Alyssa Kickbush

## **SPRING EVENTS**

- River food pantry volunteering
- Forage kitchen menu tasting
- Annual Networking with Dietitians event
- Lunch n' learn presentation with CALS staff
- Nutrition Education with a local business
- Cycling Social at the Nick
- Meeting with speaker Shawn Portwood who told us about his non-linear path to the UW PhD program
- Meeting with speaker Tara LaRowe who informed us about her path to becoming a professor and her private practice

## **GET INVOLVED!**

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 Fall 2024 semester, joining the club as an undergraduate member, or looking for volunteers or nutrition education opportunities, contact **wisc.dnc@gmail.com**



# EDITOR PROFILE

## ANNICA ROMANO

**Major:** Communications (B.A.)

**Role:** Communication and Marketing Assistant at the Department of Nutritional Sciences

**Hobbies:** Cooking, playing with my cat, reading, listening to podcasts, skincare, and hanging out with friends

**Dream Career:** Working for a skincare or fashion company (in PR or marketing!)

### Why did I choose to become a communication and marketing assistant at the Department of Nutritional Sciences?

I chose to become a communications assistant for the Department of Nutritional Sciences because I have always been interested in nutrition, especially because my mom is a dietitian. I believe that finding the root cause of health issues is so important. I have dealt with chronic eczema for most of my life, and I saw major improvements by altering my diet and taking supplements. This job also aligns well with my future career goals as I love writing, interviewing, and content creation. I graduate this Spring, and I'm going to miss all the amazing people in this department!



# EDITOR PROFILE

## MADELINE WOOTEN

**Major:** Journalism and Mass Communications (B.A.)

**Role:** Communication and Marketing Assistant at the Department of Nutritional Sciences

**Hobbies:** Photography, reading, cooking, watching TV, and hanging out with friends

**Dream Career:** Becoming an editor for a magazine or news source in a big city!



### **Why did I choose to become a communication and marketing assistant at the Department of Nutritional Sciences?**

I chose to become a communications assistant for the Department of Nutritional Sciences because it seemed like a perfect fit for me after meeting Annica and Scott. A lot of the skills required for this position, I gained during communications and marketing roles for various clubs when I was in high school. This job aligns very well with my career aspirations and I have a lot of fun working at the department of Nutritional Sciences.

# BADGER CHALLENGE



The Badger Challenge is a walking, running, and biking cancer fundraiser benefiting cancer research at the University of Wisconsin. 100% of this non-profit proceeds go towards cancer research.



**“The Badger Challenge was created to engage the community in an effort to propel cancer research at the University of Wisconsin and to fund the most promising discoveries in the laboratory and drive these to treatments and cures.”**

*-Badger Challenge Director, Dr. Deric L. Wheeler*

At Badger Challenge 2023, there were 1643 bikers, 939 walkers, 698 runners, and 353 volunteers. The Badger Challenge raised \$1,034,012 alone in 2023. Participant-raised funds from the 2023 campaign were awarded to 8 researchers and clinicians at the University of Wisconsin Madison working to advance cancer research and patient treatment initiatives. Assistant professor of Nutritional Sciences Adam Kuchnia was one of the eight researchers awarded the scholar grant in 2023. Kuchnia has a history of working in lung cancer and has shifted into the research of pancreatic cancer.

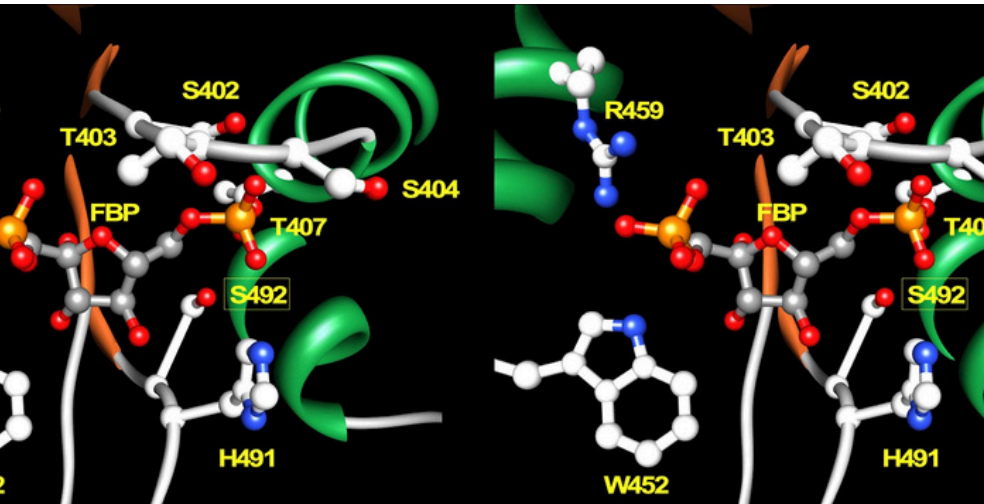


**Adam Kuchnia, Assistant Professor**  
Department of Nutritional Sciences

With the \$25,000 grant, Kuchnia will spend the next two years using these funds for anything related to his pancreatic research project. These funds will be used by Kuchnia, students, workers, and anything else that contributes to the project. The Badger Challenge will provide support for Kuchnia to continue on the cancer trajectory in his project.

“These funds are for staff and research to make an impact in cancer research. Any money helps and goes towards the same goal of improving patient outcomes and experiences,” said Adam Kuchnia.

# RESTRICTED GLYCOLYSIS IS A PRIMARY CAUSE OF THE REDUCED GROWTH RATE OF ZINC-DEFICIENT YEAST CELLS



## AUTHORS

David J. Eide  
Colin W. MacDiarmid  
Janet Taggart  
Michael Kubisiak

[Click here to read more!](#)

**Academic Staff from the Nutritional Sciences Department at UW-Madison are authors of a recent study published in the *Journal of Biological Chemistry*:** David J. Eide (Professor and Chair of the Nutritional Sciences Department), Colin MacDiarmid (Assistant Research Professor), Janet Taggart (Research Specialist), and Michael Kubisiak.

Zinc is an essential mineral crucial for various cellular processes, including metabolism. In yeast cells, a regulatory protein called Zap1 controls the expression of around 80 genes in response to zinc levels. Some of these genes help regulate zinc transport to maintain cellular zinc balance, while others facilitate adaptive responses to zinc deficiency, such as the production of the protein Tsa1. Tsa1 plays a vital role in yeast cells under zinc-deficient conditions. Depending on what's going on, Tsa1 can act like a cleaner, or a kind of sensor for the cell's health.

Researchers discovered that a mutation partially alleviated the growth defect observed in cells lacking Tsa1. Further investigation revealed that this mutation reduced the activity of pyruvate kinase isozyme 1 (Pyk1), a key enzyme in glycolysis.

Glycolysis, the process by which cells break down glucose to generate energy, requires the activity of zinc-dependent enzymes like fructose-bisphosphate aldolase (Fba1). Interestingly, under zinc-deficient conditions, Fba1 activity was substantially decreased. The researchers hypothesized that the loss of a compensatory regulatory function of Tsa1 in zinc-deficient cells leads to the depletion of glycolytic intermediates, limiting the synthesis of amino acids crucial for cell growth.





Department of Nutritional Sciences

# *Advising Suite*

## *Glow-up*

**Meet Your Undergraduate Advisors!**



**Sarah Golla**

Full-time Advisor

Approximately 100+ students assigned—serving as their primary contact for the major and questions that come up. Provides direction for Undergraduate Advising in the Department, including career advising.



**Mona Mogahed**

Part-time Advisor

Assigned advisor to approximately 40-50+ students in the major, and the primary contact for prospective students interested in declaring the major.



## **Have there been any notable shifts in Nutritional Sciences Advising approaches since you started working here?**

Nutritional Sciences has contributed resources to strengthen advising for students--hiring additional advisors when needed.

Before I started, there were 2 primary advisors for the Nutri Sci major (including pre-Dietetics)—one also provided admin support to graduate programs, and one who also taught. Now there is 1 dedicated Graduate Coordinator, and for undergraduates—a full time Academic Advisor (myself) as well as a part time/70% Academic Advisor (Mona Mogahed), and faculty advisors for Dietetics.

Mona and I strive to create an approachable, accessible, supportive, kind environment for students—to help with course planning and preparation for related careers.

Based on an annual Advising survey from the last 2 years, students largely report receiving help they're looking for, feel heard/understood by their advisor, are referred to appropriate resources, confident in the information they receive, and feel their advisor is knowledgeable about their areas of interest.

Since Mona and I started, we've implemented new outreach/recruitment strategies for the major—including holding an annual Major Information Session each Spring for UW students and speaking at Nutrition Today lectures each semester, along with having a presence at CALS events for admitted students each Spring and advising incoming students at Summer SOAR.

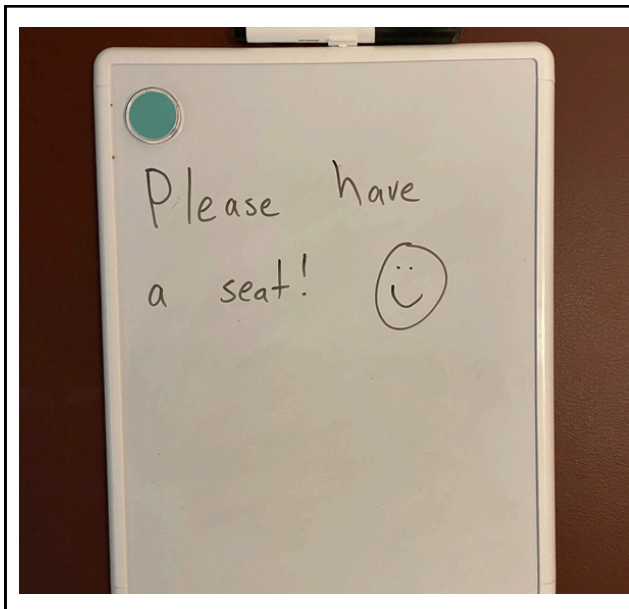
(Answers provided by Sarah Golla)

## How has the Advising suite “glow-up” enhanced the advising department?

There’s now a welcoming, comfortable, calming, dedicated space for undergraduate students to access advisors—which includes a waiting area for in-person Advising appointments. Before, our offices were not close together and students had to wait in the hallway, so it is a big improvement to the undergraduate student experience. **We’re grateful to the individual who donated a generous amount, therefore making this project possible.**



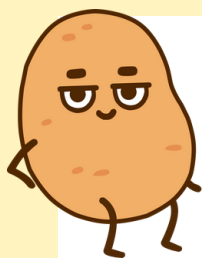
## Do you feel like more students have been drawn into the advising department since the project?



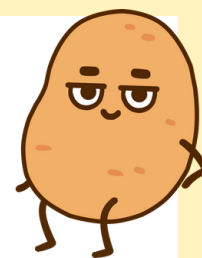
We offer Advising appointments online, by phone, and in person (and Drop-in advising online); many students appreciate the convenience of meeting virtually. For those who have come for in person appointments—including those admitted to UW-Madison deciding whether to accept, their experience is very much improved now that there’s an Advising Suite. This newsletter feature should hopefully bring more attention to our new and improved space!

(Answers provided by Sarah Golla)





# NUTRITION NUGGETS



## *Microbiome mastery: Unraveling the stress-mental health connection*

**By Stavroula N. Antonopoulos MS, RDN**

Featured in the April/May 2024 edition of Northside News

April is Stress Awareness Month, and May is Mental Health Awareness Month, shedding light on the often-overlooked connection between our food choices, stress and mental health. Our microbiome — bacteria, fungi, viruses, and their parts — plays a big role in how we handle stress and feel mentally. When our gut is “healthy,” it sends positive messages to the brain, lowering stresses and supporting happiness. On the other hand, an “unhealthy” gut can cause anxiety or sadness. Taking care of our gut through adjusting our food choices may help our mood and stress levels. Fun fact: About one-third of people with depression have folate deficiencies. Our “good” gut bacteria make folate and other important vitamins, like vitamin K and many B vitamins. While gut bacteria can create nutrients, it is important to eat foods rich in these vitamins to meet our nutritional needs. Probiotics are our live “good” gut bacteria. While probiotic supplements may benefit certain conditions, the good news is that you do not have to spend extra money on costly probiotic supplements and can reap the benefits from food sources and lifestyle changes.

- Add more probiotic foods to your diet. These could include apple cider vinegar, pickled

vegetables, yogurt, non-dairy yogurt, frozen yogurt, kefir, buttermilk, brine-cured olives, semi-hard cheeses, kimchi, sauerkraut, tempeh, miso, kombucha, jicama, leafy greens, and natto.

- Prebiotics feed your existing “good” gut bacteria. Sources include legumes, beans, apple skin, berries, bananas, peas, garlic, onions, leeks, oats, wheat bran and asparagus.
- Increasing fiber intake by eating more fruits, vegetables, nuts, seeds and whole grains can help boost your gut health and motility.
- Lifestyle changes can promote stress reduction and maintain our “good” gut bacteria through meditation, yoga, journaling, exercise, walking, support groups, therapy and listening to music.



Stavroula N. Antonopoulos is a registered dietitian nutritionist and instructor of NUTRISCI 132.



# RETIREMENT HIGHLIGHT

JULIE EWING-CHRISTENSEN



**Role:** Administrative Assistant

## How long have you worked at the Department of Nutritional Sciences?

I worked in Nutritional Sciences about 5 years. I started August, 2019. I worked in the office for 5 months and then COVID hit. We went remote for a year plus and then we had the option of working remotely. So, my time in Nutritional Sciences seems a bit surreal because of that.

## What are your current retirement plans?

My husband is also retiring from the university in April. We plan to visit and hike (fingers crossed) the Red Woods this fall. That's #1 on my bucket list. We will spend our first winter in Tucson, AZ, which is my all-time favorite city.

I will never spend another winter in Wisconsin, so we will be snowbirds! We will slowly get our house ready to sell and then build a one-story someplace in Wisconsin or Minnesota as our main home.

We love birding, nature, fishing, and the outdoors and now we can enjoy state parks, lakes, and bike trails during the week when there are less people! YAY!

I plan to take photography and drawing classes, volunteer again at the UW Arboretum and some other organization that is geared toward the older adult.

## What is your favorite memory working at the Department of Nutritional Sciences?

Working with the immediate front office staff has been one of my favorite things about working in NS. I have never been in an atmosphere quite like this before and I have worked in many different settings! Bill sets the tone for uniqueness, positive energy, and letting a person "be the real you." Scott is very kind and he's a wealth of information on just about any topic. Mary Lou is upbeat, creative, and very energetic.

## What is one thing you will miss?

The positive energy in the front office and the people.

## Parting wisdom?

Never-Ever take your basic mobility for granted!!  
Nurture incidental movement into each day.  
Get out in nature as much as you can!  
"Wherever there are birds, there is hope."  
— Mehmet Murat Ildan



# RETIREMENT HIGHLIGHT

MARY LOU KRASE

**Role:** Financial Specialist

Serving as a Futurist & assist in the success of the Department through tackling and managing daily activities in accordance to campus regulations. And a member of the group that supports the birds!

**How long have you worked at the Department of Nutritional Sciences?**

Longer than I thought I would be here!



**What are your current retirement plans?**

When I review others before me – mentors and previous leaders that I had the privilege to work for all seemed to “shift” to other interests and most continued to work in other areas that may have been in their past careers or they took their hobbies to another level. I have lots of areas to jump into and if I’m lucky - I’ll “shape shift” too!

**What is your favorite memory working at the Department of Nutritional Sciences?**

Ha! Can’t really capture just one – the department will always be a favorite in my little independent movie of life.

**What is one thing you will miss?**

The great conversations & daily occurrences that was all good material to create a script for a TV show...

**Parting wisdom?**

It’s important to build a resume that gives you options in life. Your career might end up doing something that you had no idea you could do. Try new things, take chances & have no regrets!





# ALUMNI AND FRIENDS GIVING

The Nutritional Sciences Department appreciates any and all funding it receives. If you are interested in helping the department and would like to donate to a particular cause the following are a few specific funds we have decided to highlight:

**\*Click the Titles Below to Donate\***

## **A.E. Harper Graduate Program Fund**

Fund 132041328

Established to support the Nutrition & Metabolism Graduate Program. Alfred E. Harper led the founding of the Department of Nutritional Sciences and served as its first Chair from 1968-1982. A native of Lethbridge, Alberta, Harper arrived on campus in 1949. He began research on amino acids, the building Blocks of proteins, in the lab of biochemist Conrad Elvehjem. Harper served as a member of the National Academy of Sciences Food and Nutrition Board, the 1969 White House Conference on Nutrition, the United Nations Food and Agriculture Organization/World Health Organization Expert Committee on Protein and Energy, the U.S. Department of Agriculture/National Institutes of Health Committee on Dietary Allowances, and the USDA Human Nutrition Board of Scientific Counselors. During his career, Harper guided 30 students to master's degrees and another 44 to doctorates in biochemistry or nutrition.

## **Karen Spector Scholarship in Dietetics Fund**

Fund 132045322

Established by Dianne and Jerome Spector on February 19, 1988 in memory of their daughter, Karen Spector. Created "to encourage and assist students in the Department who have enthusiasm, creativity and imagination similar to their daughter Karen," the recipient shall be a person who gives that extra measure of hard work that makes an impact on others and sets himself/herself apart from the crowd. The individual should be a person who makes the world a better place because they do a bit more and reflect the attitude that one person could make a difference.

## **Lida A. Jamison Endowment Fund**

Fund 32041929

Established in 1994 with a gift from her estate, the Lida A. Jamison Nutritional Sciences Endowment Fund supports projects within the department. This fund is used to provide faculty startup funds for new professors. Dr. Brian Parks was able to support the purchase of a state-of-the-art animal body composition analyzer, a quantitative PCR machine, and other biomedical laboratory equipment necessary to begin research. Dr. Adam Kuchnia was also able to utilize these funds to start his lab off in the right direction by purchasing cutting-edge imaging equipment needed to conduct his research in body composition and muscle metabolism.

**Hellen M. Linkswiler Graduate  
Student Award Fund**

Fund 3204282

The friends and colleagues of the late Dr. Hellen M. Linkswiler and the Department of Nutritional Sciences, College of Agricultural and Life Sciences set up this fund. Dr. Linkswiler received her MS in Foods and Nutrition and her Ph.D. in Nutrition and Physiology from Madison, and was a Professor of Nutritional Sciences at UW-Madison from 1960 until her retirement in 1981. This fund supports an annual scholarship to a student enrolled in the Master of Science in Clinical Nutrition.

**Elmer Martin Billings and Jean Hood Billings Professorship in  
Nutrition Fund**

Fund 132042840

Supports the needs of the professorship, including but not limited to books, research assistants, travel and other enhancements of teaching and scholarly activity.



**Dorothy J. Pringle Nutritional Sciences Fund**

Fund 32040173

Established on December 31, 1986 by Dr. Julie P. Thurlow to honor Dr. Dorothy J. Pringle. This fund provides support for undergraduates in dietetics and nontenure track faculty for travel and other educational experience, and expenses. Often, instructors have benefited from the Pringle Fund by attending meetings and purchasing technology they otherwise would not be able to. Dr. Pringle was an Emeritus Nutritional Sciences faculty member, the first director of the Coordinated Undergraduate Program, and was the donor's undergraduate advisor. Dr. Pringle was at the UW from 1949 until her retirement in 1985 and continued to be involved with the department until her passing at 97 years young in 2016.

# NUTRITIONAL SCIENCES

## WORD SEARCH



### Word Bank

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We welcome any questions or  
comments, please direct them to:  
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