Recent and Upcoming Events

DNS Recruiting Weekend
March 7-8, 2013
Urbana, IL

I-TOPP Lecture
Dr. Madeleine Sigman-Grant
April 3, 2013
Urbana, IL

ACES Funk Awards Ceremony
April 15, 2013
Urbana, IL

NSGSA Nutrition Symposium
April 17, 2013
Urbana, IL

Experimental Biology Meeting
April 20-24, 2013
Boston, MA

Illinois Nutrition Mixer at EB
April 22, 2013
Boston, MA

ACES Spring Commencement
May 11, 2013
Urbana, IL

Regulatory Affairs Summit
May 20-21, 2013
Washington, DC

I-TOPP Lecture
Dr. Daniel Stokols
June 27, 2013
Urbana, IL

External Advisory Committee Meeting
September 25-26, 2013
Urbana, IL

DNS Marketing Materials Available!
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nutritionalsciences@illinois.edu

The Edge
Pushing the Boundaries of Nutrition
Division of Nutritional Sciences • University of Illinois at Urbana-Champaign

Donovan Helps ASN Flourish in the Future
By: Elizabeth Koehler

Former DNS Director, Sharon Donovan, has served as the Past-President of the American Society of Nutrition for the last year. During her 4-year tenure on the ASN Board of Directors, she has made key contributions that will continue to impact the society for years to come.

When she became ASN president in 2011, she had two primary goals: 1) to update the strategic map for the Society and 2) create and launch an online ‘Learning Library.’ Updating the strategic map allowed Donovan, her colleagues and the ASN senior leadership to chart out what the Society would be doing for the next 4-5 years. During the strategic planning process, a big focus was placed on education, which led to the creation of the ‘Learning Library.’ The Society is compiling nutrition information that will be available for members to use in the classroom. There will also be continuing education materials for physicians or dietitians. Ultimately, the Society plans to make the Library available to the public.

This ‘Learning Library’ is a new activity for ASN; previously, the Society’s primary focus had been research only. Donovan says that the ASN members are the ones creating the new information in nutrition, so it makes sense for ASN to share it with members and other interested parties. Donovan has continued to move the ‘Learning Library’ initiative forward in her year as Past-President and will continue to chair the committee in the upcoming year.

Another important change Donovan helped implement was to consider the presidential line as a continuous leadership line, to ensure completion of major projects.

“You’re only president for a year, so it’s challenging to get as much done as you may want to. Using the strategic map as a guide, each ASN president has the ability to make their own unique contribution based on what they choose to prioritize. By being actively involved in the leadership over the 4-years, a president also has the opportunity to ensure that the initiatives that were begun under previous presidents are continued,” Donovan said.

As an ASN member since 1985, Donovan has had the opportunity to meet many colleagues in the nutrition field and has watched how new opportunities and challenges in nutrition research have emerged. One new, hot topic is the gut microbiome. Researchers are discovering how what you eat can affect the microbiome, which is associated with health and disease, and is important for maintain a normal functioning body. Another top challenge for the nutrition community is prevention of obesity across the lifespan and around the world. The I-TOPP program here at the University is one example of a research and training initiative currently being conducted in this area.

“We are well positioned at the University to address these really important questions related to the microbiome, developmental origins of disease, as well as obesity, both from a basic and a behavioral perspective,” Donovan said.

Donovan constantly encourages faculty members and students to get involved in the Society because of the benefits and contacts one makes.

“Participation in ASN has brought a whole new dimension to my academic career that had been both personally and professionally fulfilling.”

Participation in ASN has brought a whole new dimension to my academic career that had been both personally and professionally fulfilling.

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(217) 333-4177 • http://www.nutritionalsciences.illinois.edu
Earlier this year I had the pleasure of speaking to the new assistant professors in the College of ACES. I was invited to speak on the subject of “Development of a successful research enterprise: How to build an effective team and project management.” Although this opportunity helped me realize I am no longer a young professor, it was refreshing and energizing to speak with this eager group. I have had reasonable success in the area I was asked to speak about, but in preparing my comments I was struck by the fact that I had never conscientiously considered what is critical to building and sustaining a successful research enterprise. Are the key elements intuitive to me? I’m not sure: I just know that during my 20 years on faculty, not once have I stopped to collect my thoughts on this issue. After considerable reflection, I presented to the group what I thought was most important to the success of my research enterprise (recognizing there are other successful approaches). My list included things like the importance of mentors, the critical need to maintain balance between personal and professional matters, the value of building a diverse team where member’s backgrounds, strengths and interests are complimentary and make the team whole, personnel management, and of course funding. While these issues are clearly important, three others kept cropping up everywhere I looked in the self-analysis: communication, interpersonal skills, and relationships. As the DNS is a training ground for nutrition graduate students and has the goal of training the best nutritional scientists in the world, these comments seem apropos here. They speak to the importance of providing professional development opportunities beyond the classroom and lab to make our graduates whole. I will elaborate on this subject in the next edition of The Edge. Enjoy the summer!

Go Illini!

Rod Johnson
Adding the right prebiotic to the diets of pediatric patients with intestinal failure could replace intravenous feeding, says a new University of Illinois study.

“When we fed the carbohydrate fructooligosaccharide (FOS) as a prebiotic, the gut grew and increased in function,” said Kelly Tappenden, a U of I professor of nutrition and gastrointestinal physiology. “The study showed that using the correct pre- and probiotic in combination could enhance these results even more.”

When FOS enters the intestines, bacteria convert it into butyrate, a short-chain fatty acid that increases the size of the gut and its ability to digest and absorb nutrients, she said.

But today’s IV solutions don’t contain butyrate and adding it would entail drug development trials and regulatory red tape. She wanted to see if adding this carbohydrate to the diet while continuing to provide most nutrients intravenously would cause the gut to start producing butyrate on its own. It worked.

According to Tappenden, at least 10,000 U.S. patients are totally reliant on intravenous feeding because their intestines have been surgically shortened.

Many of these patients are premature infants who develop necrotizing enterocolitis, a kind of gangrene of the intestine. In the U.S., one in eight infants is a preemie, and removing necrotized, or dead intestine is the most common surgical emergency in these babies.

“Surgery saves their lives, but with so much intestine removed, they’re unable to digest or absorb nutrients. These babies are also at risk for long-term complications, such as bone demineralization and liver failure. Our goal is to take kids who’ve had this resection and cause their gut to grow and adapt,” she said.

She tested her hypothesis about butyrate using newborn piglets, an excellent model for the human infant in metabolism and physiology. Piglets with intestinal failure were assigned to one of four groups: a control group; a group whose diet contained FOS, a carbohydrate given as a prebiotic to stimulate the production of butyrate by beneficial bacteria; a probiotic, or actual live bacteria; and a combination of pre- and probiotics.

“We believed that bacteria in the gut would use the prebiotic to make butyrate and support intestinal growth. But we thought that might only happen in the group that received both pre- and probiotics because we didn’t know if the newborn gut would have enough bacteria to make this important short-chain fatty acid.”

Actually, the neonatal piglets did have enough bacteria in their guts, and the prebiotic alone was effective in increasing intestinal function and structure, she said.

“In fact, the probiotic that we used in one of the groups eliminated the beneficial effect of the prebiotic. That shows us that we need to be exceptionally careful in selecting the probiotic we use, matching it to the specific disease,” she noted.

Many consumers believe all probiotics are equal, but the effect of specific bacterial strains is different, she said.

“At this point, we can only recommend consumption of the FOS prebiotic alone,” she added.
**Student Recognition**

Participants of the NSGSA Chili Cook-Off held November 16, 2012.


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**2013 Margin of Excellence Travel Award Recipients**

- Timothy Abbott
- Whitney Ajie
- Gabriel Chiu
- Lauren Conlon
- Dipti Dev
- Kristy Du
- Michelle Johnson
- Claudia Luevano Contreras
- Morgan Moon
- Jonathan Mun
- Jane Naberhuis
- Elizabeth Reznikov
- Brendon Smith
- Pablo Torres-Aguilar
- Brigitte Townsend
- Anthony Wang

*Travel funds provide the opportunity for students to travel to national and international scientific conferences to present their research and interact with leading researchers and other graduate students.*

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**DNS Students on the UIUC List of Teachers Ranked as Excellent**

**Fall 2012**

- Lauren Conlon
- Peter Fitschen
- Jane Naberhuis
- Elizabeth Reznikov
- Joshua Smith
- Anthony Wang
- FSHN 420: Nutritional Aspects of Disease

**New Student:**

**Patricia Wolf**

Patricia (BS in Biology, SUNY College at Buffalo) is a new M.S. student advised by Dr. Gaskins. She is studying the role of microbial hydrogen metabolism in chronic constipation and constipation-predominant irritable bowel syndrome.

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**2013 Margin of Excellence Research Fund Recipients**

*Research funds support research conducted by students and provide them with experience in preparing research proposals. Students are selected by the quality of the proposed research and are provided $800 to $2,000.*

**Annabel Biruete (Ph.D. Wilund)**

- Efficacy of beta-hydroxy beta-methylbutyrate (HMB) supplementation in peritoneal dialysis patients

**Allyson Bower (Ph.D. de Mejia)**

- Anti-diabetic potential of culinary oregano

**Gabriel Chiu (Ph.D. Freund)**

- Adenosine receptor-induced activation of Caspase 1 via potassium efflux

**Lauren Conlon (Ph.D. Erdman)**

- Tomato powder and miRNAs in prostate cancer

**Caitlyn Getty (Ph.D. Dilger)**

- The effect of perinatal choline status on metabolic profile of the neonatal piglet

**Trisha Gibbons (M.S. Johnson)**

- Luteolin attenuates neuroinflammation and oxidative stress while influencing transcription factors and promoters of the aged microglial transcriptome

**Jodee Johnson (Ph.D. de Mejia)**

- Molecular mechanisms by which dietary flavones enhance the anti-cancer activity of chemotherapeutic drugs in pancreatic cancer *in vitro* and *in vivo* models

**Michelle Johnson (Ph.D. de Mejia)**

- Comprehensive *in vitro* and *in vivo* evaluation of the preventative inflammation and anti-diabetic properties of anthocyanins and proanthocyanidins from blueberry and blackberry fermented beverages

**Claudia Luevano Contreras (Ph.D. Chapman-Novakofski)**

- A case-control study of complications from diabetes and intake of advanced glycated end products

**Heather Manigan (Ph.D. Tappenden)**

- Butyrate induced up-regulation of signaling pathways *in vivo* represents a possible mechanism for nutrient therapy for individuals with malabsorptive disorders

**Jane Naberhuis (Ph.D. Tappenden)**

- Glucagon-like peptide-2 enhanced intestinal adaptation

**Elizabeth Reznikov (Ph.D. Donovan)**

- Mechanism of bovine lactoferrin-induced intestinal crypt cell proliferation in the neonatal piglet model

**Joshua Smith (Ph.D. Erdman)**

- Examination of array-identified prostatic peroxisome proliferator-activated receptor gamma (PPARy) signaling targets in mice with altered carotenoid metabolism fed lycopene

**Brigitte Townsend (Ph.D. Johnson)**

- Sulforaphane induces antioxidant and anti-inflammatory chances *in vitro* and *in vivo*, impacting pathways that may prevent harmful effects of aging

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**2012 Nutritional Sciences Gamma Sigma Delta Awards Banquet**

**Student News**

Recipients of the Frank W. Kari Memorial Award
Pictured (l to r): Michelle Johnson, Fang Yang, Peter Fitschen and Timothy Abbott

**Awards, Service and Personal Achievements**

- **Whitney Ajie** joined the American Society for Nutrition as a student member, received the MARC/ASN travel award to EB 2013 and competed in an oral abstract competition in Nutrition Education RIS at EB 2013.

- **Annabel Biruete** received the CONACyT fellowship and gave a poster presentation entitled “Gait impairment and variability in hemodialysis patients” at the International Conference of Dialysis in Río Mar, Puerto Rico.

- **Peter Fitschen** gave a poster presentation at the American Society for Nephrology National Conference in November 2012. He is a co-investigator on a grant in the amount of $47,500 from the Renal Research Institute titled, “Beta-hydroxy-beta-methylbutyrate (HMB) supplementation in hemodialysis patients." He also won overall and NGA natural pro at the NGA Titan Classic (bodybuilding).

- **Michelle Johnson** published “Anthocyanins and proanthocyanidins from blueberry-blackberry fermented beverages inhibit markers of inflammation in RAW 264.7 macrophages and carbohydrate-utilizing enzymes in vitro” in *Molecular Nutrition & Food Research*

- **Jane Naberhuis** is a blogger for The Substrate, the official blog of the American Society for Biochemistry and Molecular Biology’s undergraduate affiliate network and participated in the January 2013 Writing Across the Curriculum workshop, hosted by the University of Illinois writing Center.

- **Fang Yang** gave a poster presentation at EB 2013.

**NSGSA Step Challenge 2013**

NSGSA held its popular Annual Step Challenge, for the 5th year. Teams of graduate students, post-docs and faculty from DNS begin the 4-week challenge with fervor and take care to record every step using a pedometer or activity conversion chart. The top 3 teams receive a Gold, Silver, or Bronze sneaker as a medal for their efforts, every team who participates receives a certificate as a reward for their activity. No matter how you placed, NSGSA is proud that you kept it moving!

Pictured (l to r): Brigitte Townsend, Courtney Marques and Jane Naberhuis

**2013 Certificate in Business Administration Scholarship Recipients**

- **Kristy Du** •  **Brett Loman** •  **Jonathan Mun**

The University of Illinois College of Business Certificate in Business Administration program is designed to provide non-business graduate students with a strategic framework for making informed business decisions. The course offers a concentrated, detailed program that examines an array of topics such as: marketing, financial management, organizational behavior and leadership, innovation technology and management, business ethics. Scholarships for this program are sponsored by Abbott Nutrition.

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**NSGSA Officers**

- **Jane Naberhuis**
  - Chair
- **Lauren Conlon**
  - Co-Chair
- **Joshua Smith**
  - Treasurer
- **Brett Loman**
  - Co-Treasurer
- **Pablo Torres**
  - Secretary
- **Kristy Du**
  - Media Representative
- **Brendon Smith**
  - Student Representative to Faculty
- **Whitney Ajie**
  - Networking Chair

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**2013 Endowed Student Award Recipients**

- **David H. Baker Nutrition Scholar Award:**
  - Jennifer Barnes

- **James L. Robinson Nutrition Impact Award:**
  - Krystle Zuniga

- **Toshiro Nishida Research Travel Award:**
  - Dipti Dev
  - Courtney Marques

- **William C. Rose Research Travel Award:**
  - Jodee Johnson
  - Jane Naberhuis
  - Vanessa Peters
  - Nathan Pratt
  - Elizabeth Reznikov

- **Frank W. Kari Memorial Travel Award:**
  - Timothy Abbott
  - Peter Fitschen
  - Michelle Johnson
  - Fang Yang
Faculty Updates

DNS Emeriti Faculty at the Endowed Student Award Ceremony, February 2013.

Pictured (l to r): Dr. Siedler, Dr. Mistry, Dr. Robinson, Mrs. Norraine Baker, Dr. Erdman and Dr. Hatch

Juan Andrade was a Fall 2012 International Seed Grant winner.

Karen Chapman-Novakofski received the Arlys Conrad International Teaching Enhancement Grant for FSHN 428 in the amount of $5,058.

Hong Chen’s research board proposal, “Epigenetic crosstalk during the protection by dietary genistein against colon cancer development”, was funded in the amount of $29,850.

Sharon Donovan is a member of the Food and Nutrition Board at the Institute of Medicine, National Academy of Sciences, 2012-2015 Workshop Planning Committee for the Dietary Guidelines for Birth–24 months of age. She organized a Satellite Symposium on “Nutrition and Physical Activity: Impacts on Cognitive Function Across the Lifespan” at EB 2013. Additionally, she was named to the Editorial Board of Gut Microbes and as an Associate Editor of Nutrition Reviews (effective June 2013). Finally, she is a Co-PI with Barbara Fiese (Department of Human and Community Development) on a 5-year, $1 million grant from the Dairy Research Institute entitled: “STRONG Kids 2: A Cells-to-Society Approach to Nutrition in Early Childhood.”

John Erdman’s paper “Are the health attributes of lycopene related to its antioxidant function?” is one of the Top-5 most cited articles published during the 3-year period between January 1, 2009 and December 30, 2011. Nikki Ford and Brian Lindshield, PhD recipients in his lab, were co-authors.

Diana Grigsby-Toussaint was selected as the Secretary/Treasurer of the Diversity Section of The Obesity Society and is the co-investigator of the National Academies of Sciences, Keck Futures Initiative (NAKFI) study, “Healthy ecosystems and healthy people: Bringing disciplines to understand health impacts of environmental change.” (PI: Kate Bauman) She also co-wrote a chapter in “Advances in Communication Research to Reduce Childhood Obesity” and had a research article featured on the Psychology Progress website.

Craig Gunderson published “Food Insecurity is an Ongoing National Concern” in “Advances in Nutrition” in January 2013 and was awarded the Outstanding Applied Economic Perspectives and Policy Article Award.

Yong-Su Jin received the College Faculty Award for Excellence in Research and was invited to join the Editorial Advisory Board of Bioprocess and Biosystems Engineering.

Jack Juvik is hosting Dr. Hwa Yeong Kim, professor in the Department of Plant Sciences at Gangneung-Wonju National University, South Korea, working to develop a genetic transformation protocol for Miscanthus sinensis.

Schuyler Korban has been elected to serve on the newly formed University Council at the University of Kavala Institute of Technology in Greece on which he will serve a two-year term, advising on all major activities of the University, including the appointment of the University’s President.

Soo- Yeun Lee won the Campus Award for Excellence in Undergraduate Teaching.

Juan Loor went on sabbatical in fall 2012 to Italy. He worked with Dr. Giuseppe Bertoni at the Catholic University of Piacenza to study the health and nutrition of dairy cows, specifically around the time of calving. His sabbatical resulted in a more holistic view of the cow during the transition period (~21 to 21 days pre– to post-calving).

Roderick Mackie hosted Brazilian Professor Humberto Madeira, Dean of the School for Agricultural Sciences and Veterinary Medicine at Pontificia Universidade Católica de Paraná (PUCPR) in Curitiba, Brazil, during the Fall 2012 semester with the goal of using microbial genes for biotechnological applications, including production of biofuels from biomass.

Manabu Nakamura’s research board proposal, “Essential role of an omega3 fatty acid, DHA in cell adhesion,” was funded in the amount of $30,000.

Juan Andrade and Hans Stein were both selected for this year’s ACES Academy for Global Engagement.
**Alumni Updates**

Dr. Rodney Johnson (current DNS Director), Art Siedler (DNS Director 1977-1981) and John Erdman (DNS Director 1989-1999)

Brian Berg (PhD 2004) was promoted to Principal Scientist in Global Discovery at Mead Johnson Nutrition in November.

Steven Clinton (PhD 1978) was appointed the John B. and Jane T. McCoy Chair in Cancer Research for the Ohio State University Comprehensive Cancer Center—Arthur G. James Cancer Hospital and Richard J. Solove Research Institute.

Kristin Harris (PhD 2007) was promoted to Senior Nutrition Scientist at General Mills, Inc. at the Bell Institute of Health and Nutrition.

Sharon Hoerr (PhD 1985) chaired a symposium at the International Society of Behavioral Nutrition and Physical Activity in Austin, Texas in May 2012.

Shwu-Kuan (Sarah) Jaw (PhD 1993) is working at Clovis Oncology, Inc. in the Clinical Pharmacology department.

Guy H. Johnson (PhD 1976) is an Adjunct Associate Professor in FSHN at UIUC and the Executive Director of the McCormick Science Institute. In 2012, he became a charter member of the University of Illinois, College of ACES, Round Barn Society.

Naiman Khan (PhD 2012) was a finalist in the ASN Postdoctoral Research Award Competition.

Ren-Hau Lai (PhD 2009) is working for General Mills as a Senior Scientist in the Product Guidance Insights, R&D department.

Rose Ann Mathai (PhD 2012) is an Assistant Professor in Nutrition Sciences at Dominican University. She is also expecting her second child in July. Her daughter, Anya, turned two on December 14.

Tory Parker (PhD 2008) is the Director of R&D at doTERRA Intl., a science-based essential oils company. She is also an Adjunct Professor at Brigham Young University, Department of Nutrition, Dietetics and Food Science.

Victoria Vieira Potter (PhD 2009) began work as an Assistant Professor of Nutrition and Exercise Physiology at the University of Missouri in August.


Matthew Thorpe (PhD 2010) is completing a preliminary intern year in internal medicine at the University of North Carolina Hospitals, Chapel Hill, NC, prior to entering residency in radiology at Duke University, Durham, NC.

Emily Tomayko (PhD 2011) is a Postdoctoral Fellow in the Nutritional Sciences Department at the University of Wisconsin. She also completed the Christine Mirzayan Science and Technology Policy Fellowship at the National Academies in Fall 2012.

Theo A. van Kempen (PhD 1993) is the Application Specialist for the Aquaculture Stewardship Council at Nutreco.

**New Faculty: Sidonie Lavergne**

Dr. Lavergne joined the Division in December 2012. She completed her DVM in 1999 at Ecole Veterinaire de Nantes in France, Ph.D. in 2006 at the University of Michigan-Madison and held a Postdoctoral Fellowship at the University of Liverpool, UK from 2007-2009. Her research focuses on the immune system as a sentinel and player in various illnesses as well as understanding the mechanisms of drug allergic reactions.
Support DNS

The Division launched its Endowment Initiative in 2001, and we are very thankful to the faculty, students, alumni and friends who have supported DNS through contributions to the Endowment Fund and the Annual Fund. Contributions of all amounts are greatly appreciated. DNS would like to ask that you consider taking this opportunity to help secure our brilliant future by making a new contribution or an additional contribution to your alma mater.

Dear Friends,

Springtime is my favorite season on our campus. Along with all the fresh signs of life that come with the season, I like watching our students “flourish” with anticipation as they move toward the next phases of their lives. New careers, summer internships, study abroad experiences and celebrating achievements and awards for the work they have accomplished are very inspiring.

Spring is also a wonderful time to give thanks to and recognize those stakeholders that have benefitted our students, faculty and programs in the Division of Nutritional Sciences (DNS). Mentoring, hiring our graduates, teaching classes, or providing private support in the form of scholarships, programmatic funds, or sponsorships, are ALL ways to “pay it forward” in the DNS.

Take a look at the photos highlighted on this page from the 2013 DNS Student Endowment Award Ceremony. These endowed awards honor students for their superior efforts AND honor DNS leaders like: David H. Baker, Frank W. Kari, Toshiro Nishida, James L. Robinson, and William C. Rose. The people behind these endowments believed in those leaders and believe in the importance of investing in ILLINI future leaders. We are grateful!

Dr. Robinson and his wife, Jan.

The DNS has a long and successful track record of engaging industry partners (e.g., companies, commodity organizations) in activities that are mutually beneficial. We want to thank our partners for stepping up to sponsor the Annual NSGSA Nutrition Symposium on April 17, 2013. Check out these sponsors on the DNS website or Facebook page!

You too can make a difference and enjoy all that is fresh and renewed in your Division of Nutritional Sciences. Since its organization in 1968, the DNS model of multidisciplinary collaboration continues to evolve and provide superior graduate education. Gifts can be made conveniently online at http://nutrsci.illinois.edu/invest_in_dns. You may even consider making a long-term donation through your estate planning. To learn more, contact me at 217.333.9355 or kmeenen@illinois.edu.

Thank you,

Kimberly Meenen
‘87 BS ACES, ‘08 EdM
Senior Director for Advancement

Giving Options

- **DNS Excellence Endowment Fund/Project DEED (#773001):** Provides permanent funding for the recruitment and retention of the best graduate students and enhanced research and professional development experiences for all DNS students.

- **DNS Excellence Fund (#336514):** Provides current funding for research and professional development opportunities for DNS students.

- **DNS Annual Fund (#332984):** Provides unrestricted support for DNS.

- **David H. Baker Nutrition Scholar Award Fund (#771806):** Recognizes students who display excellence in research as documented through peer-reviewed publications, awards and research grants.

- **James L. Robinson Nutrition Impact Award Fund (#772698):** Recognizes students who display excellence in professional service through activities in the NSGSA or to promote and enhance DNS and/or nutrition at the campus, state or national level.

- **Frank W. Kari Memorial Award Fund (#773054):** Provides travel awards to DNS students to present their scientific findings at professional meetings, such as Experimental Biology.

- **Toshiro Nishida Research Award Fund (#772951):** Provides support for travel to national and international scientific conferences to DNS Students.

- **William C. Rose Award Fund (#770331):** Provides travel awards to DNS students to attend scientific...