

 NUTRITIONAL SCIENCES DEPARTMENT
NEWSLETTER
College of Agriculture & Life Sciences

GREETING FROM THE DEPARTMENT HEAD

Hello Everyone,

If the purpose of a newsletter is to convey news, then we are in business.

During the summer and fall, we received nine grants funding research and extension projects. We added several new members to our Department Drs. Melanie Hingle, Ornella Selmin, and Mari Wilhelm, and to our extension program Sharon Hoelscher-Day. We “extended” our extension programs by increasing our SNAP-Ed budget. Our instruction programs are booming; we now have nearly 500 undergraduate majors. We also received a National Needs Fellows grant from USDA that will fund graduate student training in obesity research, and we hosted our biennial Research Frontiers in Nutritional Sciences (RFNS) conference. Well, that’s that.

It was wonderful to see so many of you at the RFNS conference. If you participated, you enjoyed first-rate presentations on the latest research in the areas of cancer, diabetes, obesity and bioactive compounds. As part of the conference, we paused to pay tribute to the life, discoveries and dedication of Dr. Darrel Goll by an afternoon of great science in muscle biology. The conference and tribute were funded exclusively by federal and foundation grants, contributions from Colleges and Centers, as well as donations from corporate sponsors. We are most grateful to all those who partnered with us to make the conference possible.

Over the coming months, we will launch several new online courses as part of Anyplace Access for Arizonans. The courses will bring the latest nutrition information to you wherever you are. We also are rebuilding our website. The website has been “limping along” since early fall due to a nefarious group that attacked the abstract section of for the RFNS conference site. We apologize for any frustration this may have caused. (I think people who do such things have way too much time on their hands.)

None of our programs would be possible without the people who make it all happen. We are blessed with an outstanding faculty and staff, research target areas that are in demand, great undergraduate and graduate students, prosperous extension and outreach programs, and productive alumni.

As we enter the holiday season, I wish you time to read, to relax and to reflect. I wish you time to spend with those you love. I wish you peace and a very Happy New Year.



NEW GRANTS

Integrating the New Walk Across Arizona Website with Multiple Signature Program Areas to Promote Physical and Financial Health. **Nobuko (Kay) Hongu (PI)**
Funded by: Arizona Cooperative Extension

Multidisciplinary Doctoral Training in Human Nutrition and Obesity. **Scott Going (PI), Cyndi Thomson and Joy Winzerling**
Funded by: US Department of Agriculture

Expression of p63 Following Restoration of Radiation-Induced Salivary Gland Dysfunction. **Kirsten H. Limesand (PI)**, Summer Research Supplement for undergraduate Lauren Querin.
Funded by: National Institutes of Health

Autophagy & Functional Restoration of Irradiated Salivary Glands. **Kirsten H. Limesand (PI) and Randy Burd**
Funded by: National Institutes of Health/NIDCR American Recovery and Reinvestment Act.

Novel AKT PH Domain Inhibitors to Prevent Skin Cancer. **Emmanuelle J. Meillet (PI)**
Funded by: National Institutes of Health

Arizona Nutrition Network/SNAP-Ed Program. **Scottie Misner (PI)**
Funded by: US Department of Agriculture 2010.

Epigenetic Programming of Breast Cancer and Nutrition Prevention. **Donato Romagnolo (PI)**
Funded by: US Department of Defense

Efficiency of Daily Grapefruit Exposure in Reducing Body Weight. **Cynthia Thomson (PI)**
Funded by: US Department of Agriculture/Texas A&M University.

Mexican Children and Youth in the Sonora-Arizona Borders: Needs Assessment. **Mari Wilhelm (PI)**
Funded by: Programa de Investigacion en Migracion y Salud; administered by the Health Initiative of the Americas/California Program on Access to Care under the University of California Berkeley, School of Public Health.

WELCOME

Melanie Hingle who joined our research faculty as an Assistant Research Scientist.

Jesus Acuna who joined the Department in August, 2009 as an Instructional Specialist, Senior working with Jennifer Reeves.

Marilyn E. Overpeck joined the SNAP-Ed staff in August, 2009. She comes to us from Financial Services and has provided us with valuable contacts in the University administration.

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FACULTY PUBLICATIONS

N. Hongu *et al.*

Milk Matters! (2009) Arizona Extension Publication, <http://cals.arizona.edu/pubs/health/az1490.pdf>.

Pedometer and New Technology - Cell Phone & Google Maps: What You Need and Want to Know. (2009) Arizona Extension Publication, <http://cals.arizona.edu/pubs/health/az1491.pdf>.

Indoor Activities for You and Your Child. (2009) Extension, Families, Food and Fitness, <http://www.extension.org/families%20food%20fitness>.

10,000 Steps a Day - Why? (2009) Extension, Families, Food and Fitness, <http://www.extension.org/families%20food%20fitness>.

W. Howell

Advancing the Practice of Dietetic Education. (2009) *Top. Clin. Nutr.* 24:206-210 (invited).

E. Meuliet *et al.*

Direct Inhibition of Hypoxia-Inducible Transcription Factor Complex with Designed Dimeric Epidithiodiketopiperazine. (2009) *J. Amer. Chem. Soc.* (online June 17, 2009: <http://pubs.acs.org/doi/suppl/10.1021/ja807601b>).

Computational Modeling of Novel Inhibitors Targeting the Akt Pleckstrin Homology Domain. (2009) *Bioorg Med. Chem.* 17(19):6983-92.

D. Romagnolo *et al.*

Factors in The Causation of Female Cancers and Prevention. (2009) *Preventive Nutrition, Comprehensive Guide for Health Professionals.* 4th Ed. A. Bendich and R.J. Deckelbaum, Humana Press, 175-194.

O. Selmin *et al.*

Gene Expression Profiling in the Fetal Cardiac Tissue After Folate and Low-Dose Trichloroethylene Exposure. (2009) *Birth Defects. Res. A Clin. Mol. Teratol.* [Epub ahead of print] PubMed PMID:19813261.

Inorganic Arsenic as a Developmental Toxicant: in Utero Exposure and Alterations in the Developing Rat Lungs. (2009) *Mol. Nutr. Food Res.* 53(5):583-91.

C. Thomson *et al.*

Low to Moderate Alcohol Intake is not Associated with Increased Mortality After Breast Cancer. (accepted November 2009), CEBP.

Intentional Weight Loss and Lymphohematopoietic Cancer Incidence. (2009) *Cancer Causes & Control.* Epub. DOI: 10.1007/s10552-009-9453-5.

Metabolic Syndrome and Elevated C-Reactive Protein in Breast Cancer Survivors on Adjuvant Hormone Therapy. (2009) *J. Women's Health.* 18(12):1-7.

Dietary Patterns and Breast Cancer Prognosis: A Review of Current Evidence. (2009) *Future Oncology.* 5(8):1257-1269.

A Longitudinal Study of the Metabolic Syndrome and Risk of Postmenopausal Breast Cancer. (2009) *CEBP.* 18(7):2046-2043.

Implementing the Low Fat Eating Plan from the Women's Intervention Nutrition Study (WINS) in Clinical Practice. (2009) *JADA.* 109(4):688-696.

Comparison Between Dietary Assessment Methods for Determining Associations Between Nutrient Intakes and Bone Density in Postmenopausal Women. (2009) *JADA.* 109(5):899-904.

Dietary Change and Reduced Breast Cancer Events Among Women Without Hot Flashes After Treatment of Early-Stage Breast Cancer: Subgroup Analysis of the Women's Healthy Eating and Living Study. (2009) *Am. J. Clin. Nutr.*, 89(5):1565S-1571S.

M. Wilhelm *et al.*

Mutuality's Protective Effect on Inflammation in Female Rheumatoid Arthritis Patients. (2009) *Arthritis Care and Research.* In Press.

Actor and Partner Effects in Couple's Parenting: Comparing European-American and Hispanic Parents. (2009) *Early Child Development and Care.* In Press.

Adolescent Emotional Distress: The Role of Family Obligations and School Connectedness. (2009) *J. Adolescence and Youth.* In Press.

AWARDS AND NOTABLES

Dr. Randy Burd: Bart Cardon Early Career Faculty Teaching Award, College of Agriculture and Life Sciences 2009.

Trudy Morrow: 2009 2nd Quarter Outstanding Staff Award, College of Agriculture and Life Sciences.

Jennifer Reeves: was chosen to serve on the Center of Disease Control/National Association of Sport and Physical Education **Comprehensive School Physical Activity Program Writing Team.** She will provide critical expertise to the development of a guide for schools. This guide will complement the CDC's 2nd edition of the *School Health Guidelines to Promote Lifelong Healthy Eating and Physical Activity Among Young People.* She also was selected as the **Arizona Department of Education Lead Trainer** for the implementation of new Health and Physical Education standards in Arizona Schools.

IN THE NEWS

DR. RANDY BURD was featured in the UA News with an article titled "Sensitizing Tumor Response to Cancer Therapy." The article describes his work to find natural, biologically active compounds that will sensitize cancerous tumors to therapy without damaging normal tissue.

DR. SCOTT GOING was featured in the UA News and the EVLiving.com with an article titled "Combating Childhood Obesity Through Technology." Dr. Going, along with Dr. Nobuko Hongu, and others are developing a multidisciplinary approach to fight obesity in youth. The Stealth Health program will use global positioning system and digital photography technology found in cell phones to encourage physical activity and better nutrition.

DRS. KAY HONGU and **VANESSA FARRELL** were among four professionals selected as UA Cooperative Extension liaisons for the 4-H Healthy Living Task Force. Along with liaisons from other universities, this task force will help develop 4-H Healthy Living into a program priority and engage youth and their families in life-changing programs.

DR. WANDA HOWELL was featured in Marquis Who's Who in America, 64th Ed., 2010.

JENNIFER REEVES was interviewed by Martha Vasquez of KVOA News for the Topic of **Teen Bone Health** and the new US DHS **Best Bones Forever** campaign for girls. This is part of the Jump In Program that engages over 500 girls, ages 9-14, in the Marana and Catalina Foothills School District. To find out more about the program visit the website at <http://www.bestbonesforever.gov/index.cfm>.

FACULTY PRESENTATIONS, SEMINARS, AND CONFERENCES

DR. HONGU

Seminar Presentation: "Stealth Health" Approach: Integrating Global Positioning System (GPS) in Community Programs for Older Adults to Encourage Walking Outside, National Extension Association of Family & Consumer Sciences, 2009 Annual Session & Exhibits, Birmingham, AL, September, 2009.

SHARON HOELSCHER-DAY

Invited Presentation: Sharon Hoelscher-Day, Regional Specialist, participated in teaching conference attendees important aspects on Bone Builders and bone health for the first "Living Well for Arizona Families." Conference at the Maricopa County Cooperative Extension in Phoenix, AZ, October, 2009.

DR. HOWELL

Invited Presentation: "Assessing the Effect of Diet on Blood Lipids Using a Meta-Analytic Approach." The 12th International Symposium on Traditional Medicine in Toyama 2009, Toyama City, Japan, November, 2009.

DR. LIMESAND

Panel Presentation: Oral Complications of Emerging Cancer Therapies Conference, Bethesda, MD, April, 2009.

DR. HOUTKOOPER

Invited Presentation: "Healthy Living - Nutrition and Activity Tips." 13th Annual Arizona Women in Agriculture Conference, co-sponsored by the Arizona Farm Bureau Women's Leadership Committee and the College of Agriculture and Life Sciences, Flagstaff, AZ, July, 2009.

DR. MEUILLET

Invited Presentation: "Bile Acid Signaling and Colon Cancer." U of A Department of Pediatrics, Steele Children's Research Center, College of Medicine, Departmental Seminar, June, 2009.

Invited Presentation: "Novel PH Domain Inhibitors." Meeting: FASEB Summer Research Conference, Lipid Signaling Pathways in Cancer, Carefree, AZ, July, 2009.

Invited Presentation: "Inhibition of Novel Molecular Targets of Prostaglandin Formation for Antitumor Activity." Department of Molecular Medicine, Seminar Series, U of Conn., September, 2009.

Invited Presentation: "Targeting the Pleckstrin Homology Domain as a Novel Approach to Cancer Therapy." Department of Cell Biology, OUHSC, October, 2009.

DR. MISNER

Conference: W-2003 Annual Multi-State Meeting at UC-Davis where she served as Secretary. She was elected Chair of W-2003 Multi-State Research Group during 2010. November, 2009.

DR. ROMAGNOLO

Invited Presentation: "Epigenetics of Breast Cancer and Nutrition Prevention." Cancer Biology Seminar Series, Arizona Cancer Center, November, 2009.

Review Panel: Diagnostic and Therapeutic Targets, Susan G. Komen Grants Program, 2009.

DRS. ROMAGNOLO AND SELMIN

Conference: "Epigenetic Regulation of BRCA-1 by Dietary Ligands of the Aryl Hydrocarbon Receptor and Preventative Effects of Resveratrol." Meetings of the American Institute for Cancer Research, Washington DC., 2009.

DR. SELMIN

Invited Speaker: "Trichloroethylene: From the Tap to the Heart." U of A ADVANCE Data Blitz, September, 2009.

DR. THOMSON

Invited Presentation: "Discovery & Development P01 Review." held at the NIH/NCI facilities in Rockville, MD, October, 2009.

Conference: NRI Grant Review Panel, Washington, DC, July, 2009.

Conference: Vegetable & Fruit Improvement Center Conference, Austin, TX, August, 2009.

Conference: California Walnut Commission Conference, San Diego, CA, August, 2009.

Conference: American Dietetic Association Weight Management Program, Denver, CO, October, 2009.

Conference: Food & Nutrition Conference Expo (FNCE) Denver, CO, October, 2009.

Conference: NRI Grant Review Panel, Washington, DC, October, 2009.

Conference: American Dietetic Association Weight Management Program, Melville, NY, November, 2009.

Poster Presentation: "Vitamin D Intake is Inversely Associated with Breast Cancer Recurrence among Premenopausal Women." 13th Workshop on Vitamin D. Bruges, Belgium, October, 2009.

Poster Presentation: "Low Fat Versus Low Carbohydrate Diet Interventions to Promote Weight Loss and Metabolic Control in Overweight Breast Cancer Survivors." Food and Nutrition Conference and Expo, Denver, CO, October, 2009.

Poster Presentation: "One Year Results From the Multi-Site Randomized Trial of the Jenny Craig Weight Loss Program." North American Association for the Study of Obesity, Washington, DC, October, 2009.

ARIZONA NUTRITION NETWORK UPDATE



AzNN Mascot Pea Daddy visits 4-H Carnival Event

The AzNN currently works with over 90 schools and Parks and Recreation sites, and is now expanding to include other organizations in the community, such as the Pima County Cooperative Extension 4-H, the Master Gardener programs, and the Community Food Bank. This year, 4-H clubs will incorporate nutrition education into their monthly meetings and club projects. The Master Gardeners have volunteered to consult with teachers and students at participating schools about developing new and supporting on-going school gardens. The AzNN also was recently featured in an interview that was profiled in UA News, while Dr. Scottie Misner was interviewed by the Arizona Daily Star about SNAP-Ed (Food Stamp Program) and the AZNN. The AzNN team includes: Scottie Misner, Ph.D., R.D., Vanessa Farrell, Ph.D., R.D., Jennifer Reeves, M.Ed, Laurel Jacobs, MPH, Heather Ottenbacher, M.S., R.D., Jennifer Martinez, Erin Nurss, and Jesus Acuna.

UNDERGRADUATE STUDENT NEWS

Nasira Burkholder presented a poster titled "Physical Activity and Bone Geometry in Young Girls" and **Salena Meyer**, presented a poster titled "IGF1 Affects the Response of Salivary Glands to DNA Damage Following Irradiation" at the 14th Annual Graduate College Summer Research Conference, University of Arizona Student Union, August, 2009.



Salena Meyer and
Dr. Kirsten Limesand

Congratulations to Andrew Hinojos who was selected as the Nutritional Sciences Outstanding Graduating Senior for Fall, 2009.

Rosalie R. Thornton, Rebecca G. Reed and Jenna K. Larsen, (right to left) are undergraduate students who have been selected for the NASA Space Grant Internship Program for 2009-2010. They will be working on nutrition and physical activity research projects with their mentors, Dr. Kay Hongu (Department of Nutritional Sciences) and Dr. Barron Orr (Office of Arid Lands Studies).



Martha I. Mosqueda, a past intern (2008-2009) was selected to work on the Student Advisory Committee to help current NASA Space Grant Interns. For more information about these awards see the link: <http://spacegrant.arizona.edu/opportunities/internships/>

Dr. Patricia Sparks and her students prepare cookies for the Holiday Appreciation Celebration. We thank Dr. Sparks and her students for all their efforts for the celebration.



Dr. Patricia Sparks and
students in her laboratory

Nutrition Club Buzz

Congratulations to the Nutrition Club for all their hard work in collecting 3,960 pounds (40 pounds short of 2 tons) of food during their fall food drive for the Community Food Bank.



President Davie Linker and
Vice President Carrie Strong



Allison Arterbury

DEPARTMENTAL SEMINARS

Dr. Sean Limesand, Assistant Professor. Animal Sciences, "Using the Sheep Fetus to Model Complications in Human Pregnancy." August 26, 2009

Dr. Emily Ho, Associate Professor. College of Health and Human Sciences, Oregon State University. "Effect of Zinc on DNA Integrity, Oxidative Stress and Cancer Risk." September 2, 2009

Dr. Scott Going, Professor. Department of Nutritional Sciences. Development of Adiposity Standards for Youth: Criterion-Referenced (health) versus Population-Distribution Approaches." September 23, 2009

Dr. Sally Dickinson, Research Associate, Professor. Arizona Cancer Center. "Another Reason to Eat Your Broccoli: Sulforaphane in Skin Cancer Prevention." October 7, 2009

Dr. Gernot Beinbrech, Visiting Research Scholar. University of Muenster, Germany. "Functions of a Giant Protein in Skeletal Muscle." October 14, 2009

GRADUATE DEGREES / AWARDS

Doctors of Philosophy

Mary Picchioni

Mary received her Ph.D. this fall, 2009. Her research explored nutritional injury in the context of chemotherapy-induced oral mucositis. She is currently applying for postdoctoral experience to continue her nutritional injury research.

Graduate Awards

Congratulations to **Nicole Stendall-Hollis** who received the MBNA Marketing Scholarship from the American Dietetic Association, and the McClelland W. T. Memorial Scholarship from the College of Agriculture and Life Sciences.

ALUMNI UPDATE



Gale Welter received a Bachelor in Business Administration from the University of Michigan and worked as a CPA, a fitness club manager, and a group fitness instructor and personal trainer before beginning her career in dietetics. Her career change was based on a desire to help others in a meaningful and scientifically-based way to be their personal best, focusing in the areas of sports and fitness, weight management, and eating disorders. Gale completed her Bachelors and Masters degrees in Dietetics in 2003. She then worked for four years with the Bone Estrogen Strength Training (BEST) Study using her knowledge of both fitness and dietetics. During her time with BEST, she gained considerable experience in conducting a large research study and developed many lasting professional and personal relationships. She later completed her Dietetic Internship at Carondelet St. Mary's Hospital and became an RD. Since then she has become board certified by the Commission on Dietetic Registration as a Certified Specialist in Sports Dietetics (CSSD).

In late 1999, Gale landed her dream job, Nutrition Counselor at the UA Campus Health Service, in the Health Promotion and Preventive Services Department. Now in her 10th year in this position, she does 1-on-1 nutrition counseling with UA students, including UA athletes, and students with disordered eating and weight management concerns. She also does nutrition outreach and mentors students. Gale founded and managed the Farmers' Market at the UA, providing nutrition information via the participation of over 300 nutrition students. She also organizes the annual events for National Eating Disorders Awareness Week called "Love Your Body Day" for the UA.

Over the past 11 years since becoming an RD, Gale has been an active volunteer in local, state and national dietetics organizations, and is currently serving as Chair of the Sports, Cardiovascular, and Wellness Nutrition practice group of the American Dietetic Association. Her involvement has provided her with numerous education and networking opportunities that have fast-tracked her expertise, and given her access to leaders across her areas of practice. Her advice to all dietitians with a dream is to join and volunteer in the ADA practice group of their area of interest. By giving to and helping others, you will get the support to reach your goals.

This newsletter is also available online at: <http://nutrition.arizona.edu>. If you would like to receive our newsletter via email, please contact Theresa Spicer at 621-7126 or email tspicer@ag.arizona.edu. The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.

AN INTERVIEW WITH DR. CYNTHIA THOMSON**Q. Tell us briefly what you study in your research.**

My research is focused on the investigation of the role of vegetables and fruits, consumed as whole foods, in cancer risk reduction. My interests lie in the evaluation of dietary modification in the human diet and its impact on cancer and related health outcomes/co-morbidities including obesity, metabolic dysfunction, and cardiovascular risk. The majority of my research targets health promotion among cancer survivors.

Q. Describe your current research and ongoing projects.

Currently I am funded by USDA for several whole foods interventions including, a vegetable study to evaluate the optimal daily dose of bioactive-rich vegetables to promote reduction in oxidative stress and inflammation among overweight women; a study to assess the ability of daily carrot juice to increase plasma carotenoid levels and modulate oxidative stress among breast cancer survivors; a grapefruit feeding study to modify inflammatory response in overweight family members of cancer survivors, as well as a weight loss study among overweight females. In addition, I am involved in post-intervention data analysis for two large dietary intervention trials: the Women's Health Initiative low fat dietary intervention and the Women's Healthy Eating and Living study, a plant-based diet intervention among breast cancer survivors.

Q. You collaborate with several scientists, how do they fit in with your programs?

Collaborative "team" science is essential if you are interested in doing clinical research. There is no possibility of completing quality, high-impact science without collaborations. Further, collaborative relationships foster new ideas, critical thinking and generally make academic work more rewarding overall.

Q. What do you think is the most important contribution that you have made to your area of science?

I actually think developing strong graduates who go on to contribute to our understanding of diet and its role in cancer prevention is the most important contribution I can make. That aside, probably our finding that a low fat diet was associated with a significant 40% reduction in ovarian cancer risk was among the most important of our findings to date. Another important finding is greater intake of cruciferous vegetables, and vegetables generally, among breast cancer survivors taking tamoxifen results in a significant (35%) reduction in risk for recurrent or new breast cancer events.

Q. Why is it important?

The low fat ovarian cancer risk finding is extremely important in that it represents the first prospective randomized dietary intervention trial to demonstrate a significant risk reduction for ovarian cancer. Ovarian cancer is a rare event but carries a high mortality rate. Identifying lifestyle factors that can reduce risk for this disease is therefore crucial. The tamoxifen/cruciferous vegetable findings provide survivors with a reasonable dietary modification that is achievable in the target population and could result in a significant reduction in disease over time.

Q. What community groups have you worked with as partners and what are the benefits to the participants of these groups?

I have built relationships with a number of "community" groups – some local, some national. Primarily I have been working with cancer advocacy groups such as Susan G. Komen, American Cancer Society and local survivorship programs at the Cancer Center (Viva!) and through Sunstone. I have also served on research boards for several produce groups including Produce for Better Health, California Walnut Commission, and Washington Cherry Growers. These relationships help our research program to keep a pulse on issues of importance to the cancer survivor community as well as to support our recruitment efforts into diet intervention trials.

Q. How have you translated your research into public education?

On several levels I have made translation of research to the survivor population a priority. Importantly I regularly provide public presentations on diet and cancer throughout southern Arizona as well as nationally. Most recently I presented to the National Ovarian Cancer Survivor group in Indianapolis. I find this one of the most rewarding aspects of my research. I also have supported the development of educational materials, references and resources through my work with the American Cancer Society, American Society of Preventive Oncology, Breastcancer.org and Susan G. Komen Foundation. Over 12 years ago we developed a Nutrition Ways website at the Arizona Cancer Center to disseminate diet-nutrition information for patients and their families.

Q. How does your research fit into our signature research area of "Metabolic and Behavior Factors Influencing Body Composition?"

Actually our group translates research across this area as well as the "bioactives in cancer" target research area. Obesity is actually a primary health concern in a large percentage of cancer survivors – especially survivors of breast, ovarian and colorectal cancer. Several of our interventions have recruited overweight subjects as an "at-risk" group who may benefit from greater intake of vegetables and fruits. Further, in analyses of several of the intervention trials we have focused on evaluating the associations between overweight/obesity/body composition and health status. In the area of bioactives, I have been involved in several whole foods interventions with high-bioactive vegetables and fruits, many of which have assessed the effects of intake on specific biological mechanisms of cancer risk reduction.

Dr. Kirsten Limesand, Department of Nutritional Sciences Investigator Wins NIH Challenge Grant

Each year roughly 40,000 cases of head and neck cancer are diagnosed in the United States and the majority of them will undergo surgical resection of a tumor followed by radiation therapy. A common side effect associated with radiation therapy of the head and neck region is damage to the salivary glands. The most common symptom is a dry mouth that can lead to sores, cavities, problems in chewing and swallowing food, and infections. Salivary gland damage can greatly decrease the quality of life of the individual. Despite a volume of knowledge about salivary glands, there is no good way permanently to restore gland function. Artificial saliva is not a good long-term solution. Dr. Kirsten Limesand received an NIH Challenge Grant to study this problem. The goals of Dr. Limesand's research are to learn the role of what is known as autophagy in salivary glands in response to radiation therapy, and by the use of small molecule approaches to determine whether activation of autophagy protects the glands or increases their injury. Autophagy is an ongoing process whereby cells digest and recycle proteins and organelles. Depending on the situation, it could be beneficial or not. The Limesand team hopes to find a way to speed up the restoration of salivary function. This research will contribute substantially to our understanding of salivary gland function, and how to restore function to these glands in head and neck cancer patients.

Challenge grants were specifically designed to fund highly innovative research that has the potential to have great impact. Thousands of proposals were submitted, but less than 3% were funded. *Hat's off and Congratulations to Dr. Limesand and to her collaborators, Dr. David Ann, Department of Clinical and Molecular Pharmacology, Beckman Research Institute of City of Hope, and Dr. Randy Burd, Department of Nutritional Sciences, University of Arizona, for this remarkable research effort and achievement.*

We would like to acknowledge and thank all those whose financial support helped make our Conference possible.

College of Agriculture and Life Sciences

Cooperative State Research, Education, and Extension Service (CSREES), US Department of Agriculture



Novo Nordisk



GlaxoSmithKline



Susan G. Komen for the Cure



Takeda Pharmaceuticals, North America & Affiliates



Arizona Cancer Center and Cancer Biology GIDP



**University of Arizona
Endocrinology and Diabetes Programs
The Kroc Foundation Lectureship Endowment**



Mel & Enid Zuckerman College of Public Health



Southwest Environmental Health Sciences Center



**Department of Chemistry and Biochemistry
Colleges of Letters, Arts and Science**

**Southwest Environmental
Health Sciences Center**

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