

# AGING EXCHANGE

Tracking the Way We Age



Fall 2015

## ***Eggs Increase Absorption of Carotenoids*** **Scientist Studies the Benefits of Eating Eggs With Salad**

Wayne Campbell, PhD, Professor of Nutrition Science at Purdue University, is working to increase the nutritive value of vegetables. Campbell, along with post-doctoral fellow Jung Eun Kim, PhD, have studied the association between egg consumption and carotenoid absorption.

In an article published by TIME magazine, Campbell and Kim's study determined that adding eggs to a raw vegetable salad increases carotenoid absorption. Carotenoids are antioxidants—agents that protect the



*Wayne Campbell, PhD  
Professor of Nutrition Science  
Purdue University*

body against cancer, heart disease, and other chronic diseases. Increased carotenoid absorption has been associated with a longer life span, fewer chronic illnesses, and reduced cancer risk.

During Campbell and Kim's study, 16 healthy, college-aged men consumed three different versions of a raw-mixed vegetable salad. The salad included:

tomatoes, shredded carrots, baby spinach, romaine lettuce, and Chinese wolfberry. One salad did not include egg, another included 1 1/2 scrambled whole eggs, and the other had 3 scrambled whole eggs.

Scrambled eggs were used to ensure the egg whites and yolks were well mixed. Using a hard-boiled egg should provide the same benefit as long as both the egg white and yolk are consumed. The egg yolks specifically contain the dietary lipids that promote carotenoid absorption. Those that consumed the salad with 3 eggs showed increased absorption of carotenoids including beta-carotene, alpha-carotene, lycopene, lutein, and zeaxanthin. Carotenoid absorption was increased three-fold to nine-fold.

Campbell says, "Americans under consume vegetables, and here we have a way to increase the nutritive value of vegetables while receiving the nutritional benefits of egg yolks."

"Next time you visit a salad bar, consider adding the cooked egg to your raw veggies. Not only are lutein and zeaxanthin available through whole eggs, but now the value of the vegetable is enhanced."

Campbell and Kim's research findings were presented at the American Society for Nutrition's Annual Meeting this past March in Boston, Massachusetts. Campbell hopes to eventually extend his findings to all age groups.

# Congratulations 2015 Graduates!



## *Seoyoun Kim, Dual-title PhD Sociology and Gerontology*

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Hailing from Seoul, Korea, this CALC graduate pursued an undergraduate degree in Sociology at Michigan State University where she graduated as *summa cum laude*. She furthered her education at Purdue University, receiving her MS in Sociology. Seoyoun earned a Dual-Title PhD in Sociology and Gerontology this past May.

Seoyoun remarks that during college she took a health psychology course that introduced her to the life course perspective, which she found fascinating. Through this class, she was able to learn the significance of time (both historical and personal) and how time affected the life course. She credits CALC for changing her views on health among older adults and for providing her the motivation to pursue gerontology.

After graduation, Dr. Kim will be continuing her research as a tenure track assistant professor at Texas State University, San Marcos. Kim hopes to publish her dissertation chapters and continue several other ongoing projects with her Purdue University colleagues.

While at Purdue, Seoyoun states the most invaluable lesson she learned is the importance of collaboration. "Collaboration can be working on papers together, but also helping each other to succeed in graduate school. I loved CALC for this particular reason. Everyone was very helpful and supportive, which significantly facilitated my research and helped me to complete my doctoral degree."

*"Tell me and I forget, teach me and I may remember, involve me and I learn." Benjamin Franklin*

## *Abigail Howard, PhD Sociology, Minor in Gerontology*

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CALC graduate, Abigail Howard, is originally from Fort Wayne, Indiana, and began her scholastic career at Purdue University. Abigail received her undergraduate degree in Psychology and Sociology and then furthered her education by receiving her MS in Sociology from Purdue. Abigail received her PhD in Sociology and Minor in Gerontology this past May.

Howard's initial interest in gerontology was sparked by her grandmother. "My grandmother is 86 years old and has a very successful aging story. Conversations with her have inspired me to understand more about successful aging." Abigail explains that after taking an undergraduate class with CALC faculty associate, Jill Suitor, she was "sold" on the Gerontology Program.

After graduation, Dr. Howard will be working as a researcher in the Division of Planning, Research & Forensics (DPRF) for the Tennessee Department of Mental Health and Substance Abuse in Nashville. The Department oversees and coordinates department policy development, service planning and implementation. DPRF works collaboratively with all programs to develop policy through research, data collection and analysis, and program evaluation.

Reflecting on her time at Purdue, Howard remarks that her education has been extensive. One of the most important lessons she will take away from Purdue is the rewarding accomplishment of being a PhD student. She states, "It gives you the ability to teach yourself and be a student for life."



# Scholars in the Spotlight

The Center on Aging and the Life Course hosted CALC *Scholars in the Spotlight* on Friday, April 17<sup>th</sup>. The annual spring luncheon features graduate student presentations highlighting CALC's research proficiency and a keynote lecture by a faculty scholar.

Four CALC graduate students from three departments presented their research at this year's event:

- Erica Hegland, Ph.D. candidate in Speech, Language, and Hearing Sciences presented her research, *Aging Effects on Two-Tone Suppression*.
- *Neural Systems Mediating Word Retrieval in Aging* was presented by Ranjini Mohan, Ph.D. candidate in Speech, Language, and Hearing Sciences.
- Mary Marshall, doctoral student in Human Development and Family Studies, presented *Pronoun Use and Perception of Health Support in Married Couples*.
- *Conflict & Cooperation among Siblings During Caregiving: Comparisons between Turkey and the U.S.* was presented by Gulcin Con, doctoral student in Sociology.



Jacqueline Angel, Ph.D.  
Professor of Sociology and Public Policy  
LBJ School of Public Affairs  
Keynote Speaker



CALC Graduate Students  
From left to right: Ranjini Mohan, Gulcin Con,  
Mary Marshall, and Erica Hegland

Although many married couples don't realize it, pronoun usage may affect health. Mary Marshall investigated the interactions between spouses at medical appointments and at home to determine if communication and more specifically, pronoun usage, actually affected health outcomes. Mary asked the question: could physicians spot patients who aren't receiving optimal support from their spouse based on pronoun use? She studied a sample of 62 patients with Type II Diabetes whose spouse accompanied them to regular appointments.

Marshall found that communication behaviors differed by gender. Women are more oriented toward their spouse's health than are men, which was reflected in wives frequent use of "our" health problem as opposed to "his" health problem. In this study, higher rates of perceived spousal support (1<sup>st</sup> person plural pronouns) were associated with lower rates of diabetes distress.

A take-away message is that spousal health support, expressed by using pronouns that reflect ownership of the problem, aids well-being and treatment adherence.

## Language Expressing Spousal Support

### Patient use of first person plural

**Example:** Patient: "Yeah, our meals have been pretty healthy this week."

### Spouse use of first person plural

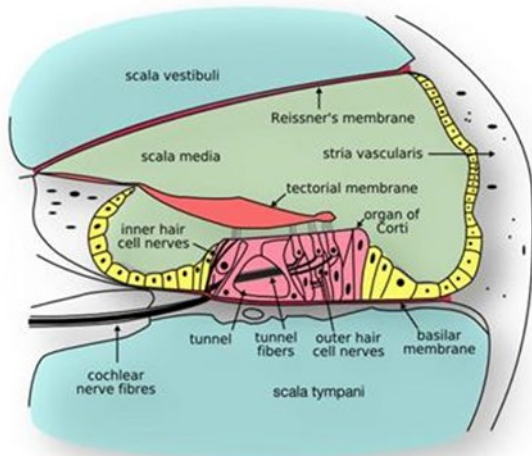
**Example:** Spouse: "Yeah, how often should we exercise because we've been walking three times per week?"

### Speaking for the patient

**Example:** Physician: "What was your blood sugar after dinner?" Spouse: "It was around 150."



In Erica Hegland's study, she set out to determine the root causes of hearing loss in older adults. Erica examined two-tone suppression—a mechanical process causing a reduction in the response of the cochlea to one sound when another sound is presented. Her work demonstrates that older adults have significantly *less* suppression in just about every situation. Less suppression can be attributed to decreased cochlear function due to aging of the stria vascularis and may be one reason why older adults have more difficulty understanding speech in the presence of “background noise.” For more information on Erica's research, see page 8.



A model of the human ear depicting the stria vascularis.

Another CALC graduate, Ranjini Mohan, examined how an older adult's hearing can be affected by the nervous system. She specifically assessed how the neural system mediates the retrieval of words. Her work was driven by the fact that 30% of adults above the age of 65 have word retrieval deficits during naming and normal conversation.

To complete the graduate student presentations, Gulcin Con compared the patterns of cooperation and conflict among Turkish and American adult children when mothers needed assistance for a health event. After in-depth interviews with sibling pairs, Gulcin found cooperation was greater and the

chance of conflict decreased in single-gender sibling groups (sisters or brothers, but not a mix of brothers and sisters). In addition, in both Turkish and American families, daughters were more likely to report conflict due to *unequal sibling participation*.

### Faculty Keynote

Jacqueline Angel, the faculty scholar for this year's event, is Professor of Sociology and Public Policy at the Lyndon B. Johnson School of Public Affairs and Faculty Affiliate in the Population Research Center at The University of Texas at Austin. Dr. Angel presented: *A Longer But Sicker Life? Policy Implication of Protracted Decline among Mexican-Origin Elders*.

It is well known that the United States population is aging. In fact, the fastest-growing age group within the U.S. is people aged 80 and older. However, not everyone is reaching advanced age, nor flourishing during this time of life. Angel's lecture focused on one population—Mexican origin elders—that faces multiple hardships. She noted while medical care and preventative care has improved for this population, the effects of impaired functioning is crippling their ability to age optimally.



Below: Dr. Angel discussing her work with CALC faculty associate, Jill Suitor.



Angel's research reveals that most Mexican-origin adults live a large fraction of their lives after age 65 with serious functional impairments. Her research team identified three patterns of functioning: 1) high initial functioning followed by stability or moderate decline, 2) moderate initial functioning followed by serious decline, and 3) low initial functioning followed by no change or slight improvement. Older adults with initially low levels of functioning were at the highest risk of death.

Further investigation discovered that nativity and age at migration also influenced the functional ability of older adults. Adults who immigrated in mid-life or late-life were more likely to fit into the highest functioning category compared to those native born in the United States or migrated early in life to the United States. Therefore, late-life immigrants were more likely to have better health later in life.

One explanation for this finding is the *healthy-immigrant effect*; immigration typically requires health and social capital. In other words, people in

poor health are unlikely to immigrate.

Within the Mexican-origin population, those with a lower education level and less financial stability are at greater risk of functional decline. Diseases that have a higher prevalence among Mexican-origin adults include hypertension, stroke, and diabetes.

Angel insists that health disparities need to be addressed by local, state, and national initiatives. Moreover, the challenge is intensifying due to declining hospital reimbursement rates for Medicare and Medicaid (associated with the Affordable Care Act).

As the prevalence of chronic health problems increases, the need for improvement in policy for the older adult population is critical, especially to reduce health disparities.

Following Angel's presentation, guests enjoyed a delicious luncheon and conversation regarding new and upcoming initiatives within the CALC community.

Megan Klotz



*Above and to the right: Guests enjoying the luncheon and discussion regarding the day's events.*



*Above: Gulcin Con presenting her research regarding conflict and cooperation among siblings.*



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## *Plake Receives Outstanding Teaching Award*

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Dr. Kimberly Plake, Associate Professor of Pharmacy Practice, was recognized as the 2015 recipient of the *Charles B. Murphy Outstanding Undergraduate Teaching Award* by Purdue University this past March.

The Murphy Award is distinguished as Purdue's highest undergraduate teaching honor and is named after Charles Murphy, a history professor at Purdue from 1927 to 1970.



*Plake receiving the Murphy Award by a surprise visit.*

The award is given each year in recognition of outstanding teaching in all phases of undergraduate instruction at the West Lafayette campus. The prize is accompanied by a \$10,000 cash award and induction in Purdue's Teaching Academy.

During an interview, Plake remarked that what she enjoys most about teaching is "watching students develop professionally and personally." She stated how watching her students transform from the first day of classes of pharmacy school until the last day of rotations is a beautiful metamorphosis.

Plake's ultimate teaching goal "is to provide students a comfortable environment where they can learn and then practice their skills."



*Kim Plake, PhD  
Associate Professor of Pharmacy Practice  
Purdue School of Pharmacy*

Ken Ferraro, CALC Director, recalls Kim Plake as an outstanding graduate student and was delighted that she returned to Purdue University. "As soon as I learned that Kim was joining the faculty of Pharmacy Practice, I wanted her as a CALC Faculty Associate. She has a strong commitment to gerontology, which manifests itself in the classroom. The Murphy Award honors her excellence for undergraduate teaching, but Kim is also an outstanding mentor of graduate students."

Plake emphasizes that the most important lesson she hopes her students walk away with is to know, "they can always make a difference...they will have choices throughout their lives to take the path of least resistance or to rise to the occasion. I hope they feel they can use their skills to rise to the occasion and make a difference in patients' lives."

Megan Klotz

***Learning is the experience.  
Everything else is just the  
information.  
Albert Einstein***



## ***Giving Parkinson's Patients More of A Voice***

Jessica Huber, Professor of Speech, Language, and Hearing Sciences and CALC Faculty Associate, is working to give Parkinson's patients more of a voice.

Parkinson's disease is a progressive disease affecting the nervous system that is notorious for limiting a person's movement. A person will experience their pace slowing as they walk, stiffness in their arms and legs, and softened and slurred speech.

A Parkinson's patient's soft voice is termed hypophonia. These patients have difficulty adjusting and controlling their vocal intensity due to impaired respiratory muscle coordination related to decreased neuromuscular function.

89% of Parkinson's patients will eventually experience speech problems. Voice and articulation difficulties can lead to distress and communication barriers.

Although there is no cure for Parkinson's disease, SpeechVive™, a device invented by Huber and created by Purdue Engineers, creates cues for patients to speak



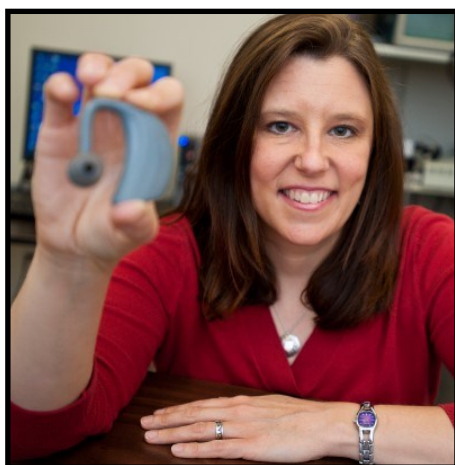
*Jessica Huber  
Professor of Speech, Language, and Hearing Sciences  
Purdue University*

louder and more clearly. Patients place SpeechVive™ in their ear just as they would a hearing aid. The device works to produce a stream of noise similar to every day background noise (talking in a crowded area). The noise cues the patient to speak up, just as a person would naturally talk louder in a noisy area. This response is known as the Lombard effect.

SpeechVive™ was tested during a clinical trial with participation by 39 Parkinson's patients. Results showed that the majority of participants experienced a successful increase in their speech volume while using SpeechVive™.

Huber has continued her work with SpeechVive™ to evaluate patient compliance and potential device modifications. In addition, Huber has been working with the Department of Health and Kinesiology to find a solution to Parkinson's patients' physical mobility.

During an interview, Huber expressed excitement about her invention: "SpeechVive™ can really make a difference in people's relationships and their ability to participate in daily activities."



*SpeechVive™ a device used to cue Parkinson's patients to raise their voice during conversation.*



**89% of Parkinson's patients will eventually experience speech problems.**



*Erica Hegland  
CALC Graduate Student  
Speech, Language, and Hearing Sciences*

Erica Hegland not only has the heart to serve the aging population but she also has the ear to listen to their wants and needs. Sitting down with Erica for a personal interview, she alluded to her passion in serving older adults. She commends older adults for their loving and personable attitudes. Because of her passion for both audiology and older adults, Erica aims to “enrich lives and help people to communicate more effectively.”

Erica began her journey in audiology as she experienced her own hearing loss growing up as a child in Wisconsin. She recalled her first encounter with a clinical audiologist. While the audiologist did not leave the most positive impact on Erica, the experience did leave Erica with the mindset, “I can do this better.” From that day forward, Erica has striven to always leave a positive impact.

Erica is currently a candidate in Purdue’s dual-title PhD program (Speech, Language, and Hearing Sciences and Gerontology). She has distinguished herself in many ways during her graduate studies, including receiving a coveted pre-doctoral fellowship from the National Institutes of Health.

Along with her colleagues, Erica conducts

## ***Erica Hegland: Listening & Hearing***

research and clinical testing at Lyles-Porter Hall in the Department of Speech, Language, and Hearing Science.

Hegland’s research focuses on two-tone suppression, a mechanical process that helps a person to distinguish different sounds in a noisy environment. The research evaluates how the aging process affects this mechanical process. Erica reports that the most frequent complaint regarding hearing loss from older adults is their inability to distinguish words in noisy environments such as family gatherings and busy restaurants.



*Erica working in the clinical lab where she studies patients’ hearing abilities.*

With her research, Erica aspires to improve hearing for the older adult population through more advanced hearing aids. After graduation, Erica hopes to remain in the Midwest and pursue a post-doctoral degree or an assistant professorship.

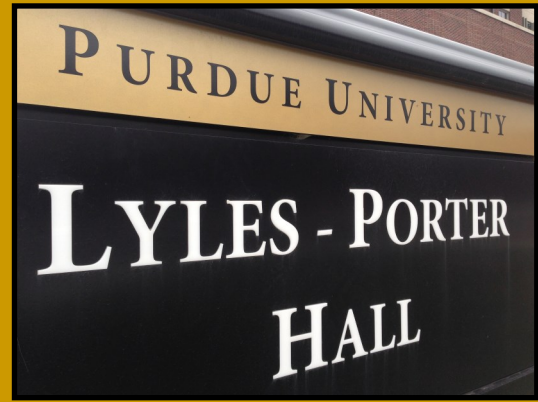
Before coming to Purdue, Erica received her baccalaureate degree in biology at Elmhurst College. She then furthered her education receiving a master’s degree in the science of audiology at Rush University in Chicago, Illinois.



While conducting research at Rush University, she found that older adults were the most enjoyable research participants she encountered at the clinic. She respected the older adults for their ability to hold a meaningful conversation and their ease in developing a personal relationship. Thus, her fire and passion for gerontology was sparked. Her mentors at Rush University encouraged Erica to follow her passion for research, teaching, and serving the older adult population.

Hegland encourages people to see the bigger picture when assessing a person's hearing loss. She remarks about the importance of understanding how physiologic diagnoses such as arthritis can play a huge role in a person's psychological well-being.

Hearing and physical barriers become too much of a burden for some older adults, which can lead to social isolation. She encourages people to engage with older adults and to create an environment that is friendly to the older adult's ear. When communicating with older adults, Erica advises people to engage in face-to-face interaction to facilitate facial cues, to sit within close proximity to each other, and to avoid overly crowded and noisy areas.



*Lyles-Porter Hall is home to Speech, Language, and Hearing Sciences research at Purdue University.*

Erica emphasizes the importance of breaking the *stigma* of hearing aids and ageism. She states, "The joy of hearing is far more important than the stigma associated with hearing aids."

Erica leaves us with the following advice, "Turn down your music and protect your hearing. You only get one pair of ears. With that set of ears, be open and listen to any opportunities in life that come along."

Megan Klotz

***Your contribution helps us further our mission:  
optimal aging - for life.***

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## *Improving Nursing Homes to Reduce Hospital Transfers*

Dr. Greg Arling and colleagues are on a mission to improve quality care of long-term stay residents by reducing avoidable hospital transfers from nursing care facilities.

The project to achieve this goal is known as OPTMISITIC: Optimizing Patient Transfers, Impacting Medical Quality, and Improving Symptoms: Transforming Institutional Care.

In 2010, the Centers for Disease Control (CDC) and Prevention National Hospital Discharge Survey reported 35,079,000 hospitalizations of which 13,591,000 hospitalizations were patients ages 65 and older. Older adults experienced longer hospital stays averaging 5.5 days.

More importantly, 24% of older adult patients will be *readmitted to the hospital* within 30 days of initial discharge. Many hospitalizations of long-term care residents are avoidable; and they are costly and burdensome to the nursing care facility, the resident, and the resident's family.

The OPTIMISM Project places a Registered Nurse (RN) in each nursing facility. Working in collaboration with a Nurse Practitioner (NP), the nurses implement an evidence-based quality improvement program with three areas of care to be improved: medical, transitional, and palliative care.



*Greg Arling presenting his research regarding reducing hospitalizations among long-term care facility residents.*



*Greg Arling, PhD  
Katherine Birck Professor of Nursing  
Purdue University*

The project took place in 19 central Indiana nursing facilities examining 4,035 long-stay residents from February, 2013, to January, 2014. During that time, there were 910 acute care transfers from the nursing home to the hospital.

**24% of older adult  
patients will be  
*readmitted to the hospital*  
within 30 days of  
discharge**

Arling and colleagues found several risk factors associated with acute transfers during implementation of the project. Residents' risk of being transferred to the hospital was higher for persons with: congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, pneumonia, urinary tract infections (UTIs), pressure ulcers/sores, cognitive and functional decline, and polypharmacy (the use of two or more drugs in combination with each other). Residents at greatest risk were those living with dementia.

The project also evaluated the involvement of the family in the decision to transfer a patient to and from another facility.

Although families were involved in the majority of the transfers, the project demonstrated that families and/or residents did not initiate the idea. The principal triggers for transfer were dementia, recurrent falls, and COPD.

Moving forward, Arling articulates the importance of better communication between staff, medical providers, residents and families when deliberating the need to transfer a long-term care resident to the hospital. Special attention should be paid to the care of residents living with specific chronic diseases, especially dementia.



While implementation of the OPTIMISTIC is ongoing, one nurse comments on the impact of the project.

“I’m a new RN and wasn’t sure what to do when I realized one of my residents was actively dying. She had advanced dementia, and her family was clear they did not want her hospitalized again. The OPTIMISTIC nurse was at my side and guided me through taking care of her. She showed me how to position her for increased comfort, tracked down a radio so we could play her favorite music, and talked with me about what to expect. The OPTIMISTIC nurse made the process seem natural for me. She coached me through talking with the family. When the resident passed away during my shift, I felt confident that I had given the best care that I could.”

Through quality improvement projects such as OPTIMISTIC, and the determination of people like Greg Arling, Purdue seeks to optimize the quality of life for our most needy older adults.

*Rates were calculated using U.S. Census Bureau 2000-based postcensal estimates of the civilian population as of July 1, 2010. SOURCE: CDC/NCHS National Hospital Discharge Survey, 2010.*

*Beautiful young people are accidents of nature, but beautiful old people are works of art.*

*Eleanor Roosevelt*

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## Contributors to the Issue

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### Upcoming Events, Fall 2015

When & Where	Speaker	Presentation
September 18th 12:30-1:25 pm Lyles-Porter Hall 1028	<b>Jiyeon Lee</b> , Assistant Professor, Speech, Language, and Hearing Sciences	<i>Effects of Aging, Aphasia, and Parkinson's Disease on Sentence Planning Units</i>
October 2nd 8:00am– noon Lawson Hall 1142  <b>Optimizing Functional Ability in Later Life</b> Co-sponsors: Purdue University School of Nursing & Purdue University Retirees Association  <i>Pre-register at <a href="#">CALC website</a>.</i>	<b>William Satariano, PhD, MPH</b> , Professor of Epidemiology and Community Health, University of California, Berkeley  <b>Sarah L. Szanton, PhD, ANP, FAAN</b> , Associate Professor and Director , PhD Program, Department of Community– Public Health, Johns Hopkins University School of Nursing	<i>Optimal Mobility in Later Life: Why Place Matters</i>  <i>Supporting Older Adults' Functional Goals through Person–Environment Fit: the CAPABLE Studies</i>
October 23rd 12:30– 1:25 pm Krannert Building G007	<b>Ellen Ernst Kossek</b> , Basil S. Tuner Professor of Management	<i>Organizational Interventions, Working Family Change Perspectives and Psychological Health: Evidence from the Work Family Health Network</i>
November 6th 12:30-1:25 pm Beering Hall 1248	Panel Discussion: <b>Wayne Campbell</b> , Professor of Nutrition Science <b>Nancy Edwards</b> , Associate Professor of Nursing <b>Jessica Huber</b> , Professor of Speech, Language, and Hearing Science	<i>Designing Interventions for Optimal Aging</i>