GENERAL ANNOUNCEMENT
The College of Allied Health Research Day provides a platform for exchanging research/scholarship among faculty and students and creates an opportunity for collaborations across disciplines and college. Faculty and students in the College of Allied Health, or who are collaborating with College of Allied Health faculty and/or students, are invited to submit abstracts for a poster or oral presentation. Research that has been or will be presented in other venues is still eligible.

In order to present at Research Day, each submission will include an abstract of the research project (formatted as per below specifications), a short bio for the presenter, one learning objective, and the name of a potential clinical discussant for the presentation. This submission will be evaluated by the College of Allied Health Research Committee. This committee will assign approved abstracts to oral or poster presentations.

You may present from one of three locations: Oklahoma City campus, Tulsa campus, or via distance software (reserved for students or faculty who are out of state and who are selected for oral presentations). Only one option may be selected during the submission process.

There are three potential categories for submission: Original Research, Literature Review, and Case Report/Case Study.

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<th>SUBMISSION CATEGORIES</th>
<th>Description</th>
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<td>Original Research</td>
<td>May include observational or experimental studies in any stage of completion: completed research with outcomes, research that is in progress with some outcomes, or research proposals. When you select this option on the submission form, you will specify which stage your research will be in at the time of presentation.</td>
<td>Completed quantitative or qualitative research. Preliminary work which can demonstrate some but not all results. Emerging faculty or student project, including student thesis or dissertation in the proposal stage.</td>
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<td>Literature review</td>
<td>Research that demonstrates a systematic and replicable review of the literature to answer a clinical question deemed appropriate for advancement of science and/or education.</td>
<td>Systematic reviews, meta-analyses, critically-appraised topics.</td>
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<tr>
<td>Case report/case study</td>
<td>Descriptive project that highlights novelty in choice of participant, assessment, or intervention.</td>
<td>Case report; case study completed to provide preliminary feasibility or data.</td>
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REQUIRED SUBMISSION INFORMATION

1. **Abstract:** All abstracts must follow the abstract guidelines listed below, or the abstract will not be scored and will not be invited for presentation at Research Day.

2. **Speaker bio:** Submit a short biography on the presenter as a Word document or PDF labeled as follows ‘Last name-First initial_bio#.docx’ (Example: ‘Hile-E_bio1.docx’), For faculty, submit the first 2 pages of your CV. Students, please submit a 3-5 line paragraph description of your training and professional expertise as it relates to your ability to speak on this topic.

3. **One learning objective:** This objective states what the audience will be able to do with the knowledge gained from your presentation. Submit one objective for your session using the stem: “Following this presentation, attendees in this interprofessional audience will be able to…”

4. **Name of potential clinical discussant.** Oral presentations will be followed by a brief clinical discussant. The clinical discussant is a person who can provide additional insight or a different perspective on your research. This may be a person in your field but in a different area (basic science, clinical research, patient care), someone in a different profession but who may have something to learn from your research, fellow students who may build upon your research, even someone from the community who may benefit from your research. Be creative in your selection, and prepare your clinical discussant for his or her role. As an example, a clinician may comment on how the research 1) would be feasible or accepted in the clinic; 2) could change, enhance or broaden clinical practice; 3) could be improved/expanded in ways that would aid clinical practice. If chosen for an oral presentation, you will be required to coordinate your presentation with your selected clinical discussant.

ABSTRACT GUIDELINES

Individuals (students and faculty) may submit no more than 2 abstracts as the primary author, but are allowed unlimited submissions as secondary author. The primary author is defined as the leading author of the abstract and the one whose name appears first in the abstract. This is also the submitting author. It is the responsibility of the primary author to ensure that names, credentials, and affiliations of all co-authors are included and that authors are listed in the order they will appear on the abstract and citation.

Length and format: Abstracts must be no longer than 1 page, single spaced, with 1-inch margins and left justified text in Times New Roman (11 point) font. Each abstract must be submitted as a Word document or PDF labeled as follows ‘Last name-First initial_abstract#.docx’ (Example: ‘Hile-E_abstract1.docx’).

Each abstract must include each of the following items, or it will not be scored. Example abstracts are included for reference.

Required elements:

1. **Project Title**
   - Project Title: all capital letters, no more than 15 words, centered
   - Name of author/presenter, collaborators, and credentials: first initials and last name with a superscript number identifying departmental affiliation
   - Departmental Affiliations

2. **Body of Abstract** (all sections are required)
   - Headings for the abstract will be dependent on type of work submitted. Please follow sections in the categorical examples provided in the pages following this call.
   - All submissions must have a Relevance to Allied Health section. Submissions without this section will not be reviewed! The author should provide compelling rationale for why the research should be of interest to other disciplines. Chosen presentations should include this section in oral remarks.
SUBMISSION DEADLINE: 11:59 pm on February 16, 2018. Late submissions will not be accepted.

ABSTRACT EVALUATION
Abstracts will be evaluated for scientific merit by the College of Allied Health Dean’s Research Advisory Committee. Committee members who are authors or mentors on an abstract are recused from discussion and voting. Presenters and discussants will be notified by March 12, 2018 by e-mail regarding acceptance and type of presentation. Further instructions will be included with notification.

If you are selected for an oral presentation:
- Oral presentations will be 10 minutes in length, with 5 minutes for the clinical discussant and time for Q & A. Timeslots will be assigned in both morning and afternoon sessions.

If you are selected for a poster presentation:
- Poster presentations will take place in morning and afternoon sessions, and the primary author or a designee will be assigned a specified window of time to stand at the poster and answer questions. Regardless of the assigned presentation time, all posters MUST be hung by 8:00 AM on April 13, and will be posted for the entire day.

RESEARCH DAY REGISTRATION
After selections to the program are made by the committee and a flier detailing speakers is developed, faculty and students will be asked to pre-register for Research Day to allow for adequate space for attendees.

If you have questions, please contact your department’s representative on the research committee or Dr. Leah Hoffman, Research Committee Chair, by e-mail at Leah-Hoffman@ouhsc.edu.

Research Committee Members:
Christi Barbee- Communication Sciences and Disorders
Carole Johnson- Communication Sciences and Disorders
Katerina Ntourou- Communication Sciences and Disorders
Jonathon Baldwin- Medical Imaging and Radiation Sciences
Leah Hoffman- Nutritional Sciences
Jennifer Graef- Nutritional Sciences
Vince Lepak- Rehabilitation Sciences
Alex Mdzinarishvili- Rehabilitation Sciences
Hongwu Wang- Rehabilitation Sciences
Anna Jilla- Student Member
Background: Nutritional status is often assessed using BMI or percent body fat. BMI can however, misclassify a person that carries more weight as lean tissue mass. Similarly, assessing percent body fat can be misleading in cases of malnutrition or in disease states characterized by wasting or reduced lean tissue mass. Past research suggests that the use of the fat-free mass index (FFMI) may alleviate some of these issues. Where BMI is a useful tool to interpret body weights from individuals of differing height, FFMI can be useful to interpret body composition from individuals of differing body weight and height. This would allow identification of individuals with similar body fat, but differing in height and therefore lean tissue mass.

Purpose: The purpose of this study was to determine whether the FFMI differs in a group of racially/ethnically diverse adults.

Methods: Subjects were a multi-ethnic sample (Caucasian – CA, African American – AA, Hispanic – HIS and Asian – AS) of 1339 healthy males (n=480) and females (n=859) ranging in age from 18 – 110 years. Total body fat, lean, and bone mineral content (BMC) were measured using dual energy x-ray absorptiometry (GE Lunar DPXL, Madison, WI) and analyses were performed using software version 4.7e. Multiple regression analysis was used to examine the relationship between FFMI and race. Gender, age, age*gender interaction, and age*race interaction were the significant covariates and interactions retained in the final model.

Results: The FFMI value for the mean age of the group (46.4 yrs) for males and females, respectively are as follows: CA = 20.3 kg/m² and 16.6 kg/m², AA = 21.2 kg/m² and 17.5 kg/m², HIS = 20.7 kg/m² and 17.0 kg/m² and AS = 18.7 kg/m² and 15.0 kg/m². All groups differed from CA (p≤0.004). Main effects for gender and age were found (p≤0.001) such that males had a greater FFMI than females, and as age increased FFMI decreased in males (non-AA: β=-0.028; p≤0.001, AA: β=-0.044; p≤0.001) however only AA females decreased in FFMI with increasing age (β=-0.018; p≤0.002).

Discussions/Conclusions: Differences in FFMI between race/ethnic groups and gender were found and a decline in FFMI with age was indicated across all groups in males and in AA females.

Relevance to Allied Health: These findings have clinical implications for all allied health disciplines in identifying individuals that may not be recognized as being in an abnormal nutritional state based on their BMI or percent body fat values, but have a relatively low amount of lean tissue mass.
Background: Estimates from 2005 report that 57% of children in the U.S. ages 3-6 years old attend full or part-time child care centers (CCCs). Federal guidelines require CCCs to provide 1/2 to 2/3 of the Recommended Dietary Allowances for children in full-day care. The majority (80%) of children do not consume adequate daily fruit and vegetable and are therefore likely deficient in micronutrients such as iron, folate, magnesium, zinc, vitamins A and E, and calcium; however few studies examined this in young children.

Purpose: To assess the micronutrient intake of preschool aged children (3-5 years) from CCC lunches in Oklahoma.

Methods: Lunches of preschool children (3-5 years, n=300), will be observed using the Dietary Observation for Child Care (DOCC) protocol. Portions of food served and food consumed will be documented for a minimum of two lunch observations per child, which will be subsequently averaged. FoodWorks® nutrient analysis software will be used to determine the micronutrient values for both food served and food consumed; these values will be analyzed with Microsoft Excel and SPSS 19.0. Average micronutrient values of food served and consumed will be compared between males and females using Student’s t-test or the Wilcoxon-Mann-Whitney test, as appropriate. ANOVA will be used to make similar comparisons across age groups.

Results/Areas of feedback desired: It is hypothesized that micronutrient values of food served will be similar for sex and age though values for food consumed will vary with higher intake in males and older ages. Feedback on how to improve methods for documenting food intake to increase reliability is requested.

Conclusion: Studies have investigated micronutrient intake in adolescent aged children, but not preschool children attending CCCs. Our study will expand the evidence on micronutrient intake in preschool children and may lead to nutrient recommendations.

Relevance to Allied Health: Nutrition intake is an important part of a broad evaluation for all disciplines given the impact of nutrients on physical, cognitive and emotional function.
Background: Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect of breast cancer treatment that can limit cancer intervention options, and also impact balance, mobility and quality of life long after last chemotherapy dose.

Purpose: The purpose of this systematic review was to provide physical therapists (PT) with evidence-based recommendations on tools for clinical assessment of CIPN in adult breast cancer survivors.

Methods: A team of reviewers identified all published measures of CIPN meeting the criteria of: clinically feasible, addressing the CIPN experience (signs/symptoms/or both), and with published psychometric properties established in survivors of breast cancer, or a cancer for which the same chemotherapy agents are used. Identified measures were then systematically reviewed and scored according to the Breast Cancer EDGE Task Force Rating Scale from 1 (Do Not Recommend) to 4 (Highly Recommend).

Results: Of 11 measures meeting the review criteria, only one, the Functional Assessment of Cancer Therapy/ Gynecologic Oncology Group-Neurotoxicity Scale (FACT/GOG-Ntx) received the highest rating of 4 (highly recommend). FACT-GOG-Ntx has high clinical utility for PT, well-established psychometric properties, and published validation with chemotherapies used in breast cancer survivors. The ten remaining measures received ratings of 2 (unable to recommend at this time).

Conclusions: The Oncology Section Breast Cancer EDGE Task Force on Clinical Measures of CIPN recommends the FACT/GOG-Ntx during physical therapy screening or assessment of CIPN in breast cancer survivors who have received neurotoxic chemotherapy, however it is not recommended for use in isolation. Therapists are encouraged to supplement with further tests and measures to capture sensory, motor and autonomic deficits specific to each survivor, along with related activity and participation restrictions.

Relevance to Allied Health: Allied Health professionals must use validated tools specific to their field when determining their clients’ needs and measuring the outcomes of interventions provided. It is important to consider the clinical utility of the tool or measure, and the applicability to each specific patient. In many cases, a ‘perfect’ tool or measure cannot be identified. Allied health clinicians should partner with researchers in and across fields to develop and validate new tools that better meet the needs of the rapidly expanding allied health professions.
Background: Cerebral palsy (CP) is the most common motor disability in children. Children with CP typically experience difficulties with postural control and motor abilities. Nintendo’s Wii™ is a gaming system, which elicits cognitive, social and motor responses of all users and is being used in the clinic therapeutically to increase motivation for therapy and provide a fun alternative to exercise with children with CP.

Purpose: The purpose of this critically appraised topic (CAT) was to investigate the clinical question: What is the effect of a Wii-based training program on gross motor function (GMF) and functional mobility (FM) in children with cerebral palsy?

Methods: Study inclusion criteria: studies included in the CAT investigated the effectiveness of using a Wii™-based training program to improve gross motor function and functional mobility in children and adolescence with CP. A literature search was performed using OVID, ScienceDirect, CINAHL, PubMed, AJOT and Google Scholar databases using the key search terms: "Wii, electronic devices, virtual rehabilitation, virtual reality, children, pediatrics, pediat*, cerebral palsy, balance, and motor" which located 20 articles for review. If the inclusion of a study was questioned by the first author, it was discussed with the second author until a consensus about appropriateness was reached.

Results: We found four studies of varying methodology, which met our search criteria. The first study (Jelsma et al, 2012) was a non-randomized control trial, one group, pretest-posttest design that found that Wii™ is an effective tool to be added to conventional treatment to improve static balance of children with CP. The second study (Taracki et al, 2013) was a single blinded design with multiple subjects, repeated measures and multiple baselines, which found that effects from the Wii™ does not translate into functional gains, thus Wii™ should only be used in conjunction with traditional therapy. The third study (Gordon et al, 2012) was a non-randomized control trial, one group, pretest-posttest design that showed that Wii™ has the potential to be an effective tool for rehabilitation. The last study (Duetsch et al, 2008) was a retrospective and prospective case report that interpreted the feasibility and outcomes of Wii™ as an additional instrument in rehabilitation of an adolescent with cerebral palsy and found that Wii™ is a practical, effective tool to address impairments associated with CP. While all 4 studies used the Wii™ intervention and used comparable outcome measures, we found methodological variety in study design, intervention intensity and outcome measures with limited focus on the lasting effect of the intervention.

Conclusion: In adjunct with other therapies, Wii™-based training program has been associated with improvements in children’s balance, coordination, gross motor function, and functional mobility. Interestingly, none of the studies examined the effects of Wii-based training program on the occupational performance of children with CP.

Relevance to Allied Health: The Wii™ gaming system may be a useful adjunctive therapy for a variety of disciplines working with children with CP in order to prompt physical, cognitive or social responses.
Background: Recent evidence suggests that chemotherapy-induced peripheral neuropathy (CIPN) is bothersome and interferes with activity and participation, even when graded as ‘mild’ by the oncologists. For some survivors, CIPN is painful, yet pain medications may interfere with postural control; a concern for balance already challenged by CIPN and age-related decline. Given that CIPN can persist long after chemotherapy has ended, better management of related pain and imbalance are critical to survivorship.

Purpose: This case report describes the apparent impact of treadmill gait training (TMT) on functional mobility and pain outcomes in an older adult breast cancer survivor with severe, persistent CIPN.

Case Description: A 73 year old female, previously an unlimited community ambulator, underwent left lumpectomy for breast cancer and stopped chemotherapy after developing severe sensorimotor CIPN requiring bilateral ankle-foot orthoses (AFOs) for ambulation, and a wheelchair for community mobility. At cancer PT evaluation 2 years later, she had progressed to walking with standard cane without AFOs. Gait Speed (GS) with cane was 0.86 m/s and Timed Up and Go (TUG) was 15.2 s, both with losses of balance, and she reported recent injurious falls. Finger and toe pain was 10/10 and ‘stabbing,’ even on 15mg oxycodone (Oxy) and 3000 mg gabapentin (Gab) daily. Cancer PT added TMT to her existing PT program of overground balance and gait training.

Outcomes: After 4 minutes of TM walking provided transient pain relief (0/10), she added TM to her home program and began to wean Oxy. By 6 weeks, she discharged cane use for indoor mobility, and GS improved to 1.0 m/sec. At 6 months (on 6 mg of Oxy), she transferred care to Cancer PT for TMT with intermittent speed challenge and emphasis on consistent foot clearance and step width, length and time. After 5 months of weekly PT she improved in: Balance Confidence (66.3% from 51.3/100%), Dizziness Handicap Inventory (18 from 50/100), GS (1.06 m/s without cane), TUG (10.3 s and steady), and Functional Gait Assessment (16 from 12/30). Through continued use of home TM for pain relief, she weaned to 2400 mg Gab and no Oxy. She had no falls in 4 months and resumed gardening on a slope and carrying plates of food and a full laundry basket with no cane.

Discussion: TMT appeared to provide a non-pharmacologic pain management strategy for this older adult with persistent painful CIPN, a phenomenon supported by animal research. Further, with no corresponding improvement in nerve function, she achieved significant improvement in functional mobility over 5 months of TMT, even after plateauing with 2 yrs of standard rehab. This suggests that TMT may have provided this patient with advantages over standard rehab, however randomized controlled trials are needed to quantify any advantage of TMT over standard PT and natural history of neural repair.

Relevance to Allied Health: Rehab clinicians should consider a trial of TMT for clients with painful neuropathy, or those with residual mobility deficits after a course of overground gait training. All allied health professionals should consider new strategies when a patient plateaus with standard care, and monitor for unanticipated secondary benefits of interventions.