

the participant's life, influences on aging well, and their aging process. Thematic analysis was used to establish codes and main themes based on the three different cultural regions of Alaska. Results argue for the expansion and emphasize on social components, historical perspectives, and the importance of place (cultural and geographic differences), as well as generativity and gerotranscendence. Findings will be used to develop community-specific health promotion and prevention programs to help Elders find meaningful activities that promote health and teach individuals to cope with aging-related changes.

## SESSION 4165 (SYMPOSIUM)

### THE CLINICAL TRANSLATION OF SENSOR TECHNOLOGY TO IMPROVE PROVIDER AND PATIENT CARE: METHODS AND ACCEPTABILITY

Chair: Megan Huisingsh-Scheetz, *University of Chicago, Chicago, Illinois, United States*

Co-Chair: Qianli Xue, *Department of Medicine, School of Medicine, Johns Hopkins University, Baltimore, Maryland, United States*

Discussant: Jennifer A. Schrack, *Johns Hopkins University, Baltimore, Maryland, United States*

Sensor-based technologies are rapidly emerging and are capable of collecting objective, dynamic, and high resolution health data not captured in the clinical setting. However, the precise clinical applications of such devices are not yet well delineated; extensive challenges to their implementation remain. The objectives of this symposium are to highlight a) opportunities for sensor technology use in clinical practice, b) implementation challenges reported by key stakeholders, and c) an NIH/VA-sponsored initiative to create an open technology research platform to improve aging technology research. Dr. Young will discuss the novel application of wearable sensors for maintaining proper posture/position during patient transfer including the generation of sensor metrics defining proper lifting technique and body mechanics. Dr. Huisingsh-Scheetz will report analytic strategies for identifying frailty using wrist-worn accelerometry data collected in the free-living environment in the NIA-supported National Social Life, Health and Aging Project dataset. She will report her work relating hourly activity and between/within subject hourly activity variance to frailty. Ms. Blinka will report qualitative feedback collected from patients, caregivers, and healthcare providers about their perspectives on the utility and challenges of using sensor technology in a clinical context. Dr. Kaye will discuss ongoing developments addressing challenges to implementing technology use in clinical care, with particular attention to the Collaborative Aging Research using Technology (CART) initiative supported by the NIH and VA. Collectively, these presentations will advance sensor technology to improve healthcare delivery.

### A FEASIBILITY STUDY: THE DEVELOPMENT OF WEARABLE TECHNOLOGY FOR INJURY PREVENTION AMONG DIRECT CARE WORKERS

Yuchi Young,<sup>1</sup> Yuchi Young,<sup>1</sup> Mitch Leventhal,<sup>1</sup> Jonathan Muckell,<sup>2</sup> Peter E. Raymond,<sup>3</sup> Fred Erlich,<sup>4</sup> and Christopher Paynter<sup>5</sup>, 1. *SUNY at Albany, Albany, New*

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Objectives: 1) create metrics for lifting techniques and transferring mechanisms, 2) calibrate sensors for data collection 3) identify potential injurious posture among home health aides (HHAs) while transferring patients. Participants: 7 HHAs and a physical therapist. Interview and sensor data were collected. Outcome variables included improper lifting techniques and improper body mechanisms. Obesity of HHAs was associated with worse scores of body mechanics ( $p < 0.0001$ ), while fear of injury with better body mechanics ( $p < 0.0001$ ). GEE results identified that twisting the spine during transfers (OR = 6.3; 95% CI: 1.09–36.7) and not using a wide support base when lifting from supine to sitting (OR= 6.0, 95% CI: 2.03–17.7) were associated with improper lifting technique and body mechanics. Results show it is viable to use sensor technology to collect HHAs' data to design intervention for injury prevention. A larger-scale study is needed to validate the results.

### NEW ACCELEROMETRY PATTERNS IN FRAILITY: HOURLY ACTIVITY AND VARIANCE.

Megan Huisingsh-Scheetz,<sup>1</sup> Kristen Wroblewski,<sup>1</sup> Linda Waite,<sup>1</sup> Elbert Huang,<sup>1</sup> Donald Hedeker,<sup>1</sup> and L. P. Schumm<sup>1</sup>, 1. *University of Chicago, Chicago, Illinois, United States*

Wearable sensors may improve our ability to identify frailty in the community. Frailty has been historically defined, in part, by reduced average activity; however, new analytic methods of aggregate, free-living accelerometry data suggest that frailty may be more fully characterized above and beyond reduced average activity. Using mixed-effect regression models of awake hourly activity from the National Social Life, Health and Aging Project dataset, we have shown that frail adult activity is most reduced in the morning relative to pre- and non-frail adults rather than the afternoon or evening. High residual between- and within-subject activity variance in this model prompted further study of activity variance. A follow-up analysis using a mixed-effect location-scale model of hourly activity data revealed that increasing frailty in older adults is associated with greater between-subject as well as within-subject hourly activity variability, particularly in the morning and afternoon. Study implications and future directions will be discussed.

### DEVELOPING A SENSOR-BASED MOBILE APPLICATION FOR IN-HOME FRAILITY ASSESSMENT: A QUALITATIVE STUDY

Marcela D. Blinka,<sup>1</sup> Brian Buta,<sup>1</sup> Kevin Bader,<sup>2</sup> Casey L. Hanley,<sup>2</sup> Nancy Schoenborn,<sup>3</sup> Matthew McNabney,<sup>3</sup> and Qian-Li Xue<sup>1</sup>, 1. *Center on Aging and Health, Division of Geriatric Medicine and Gerontology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States*, 2. *The Johns Hopkins Applied Physics Laboratory, Laurel, Maryland, United States*, 3. *Division of Geriatric Medicine and Gerontology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States*

Frailty is an important concept in the care of older adults, and there is great interest in incorporating user-friendly frailty assessments into research and clinical settings. In-home, sensor-based technologies may provide a more dynamic, sensitive, and accurate assessment of frailty measures. To investigate user perspectives for use of sensor-based technologies and mobile applications, we held five focus groups with community-dwelling older adults (n= 10), their informal caregivers (n=9), and medical professionals (n=8). We used qualitative inductive analysis to organize thematic content. Caregivers and care-recipients viewed the early identification of frailty as beneficial, but highlighted the need for secure data infrastructure and clear demonstration of how frailty assessment would improve care. They also expressed concerns that technology-based communication could reduce in-person interactions. Medical providers noted the utility of objective data for difficult conversations with caregivers of frail patients, but worried about resources for analyses and interpretation of sensor-based health information.

#### COLLABORATIVE AGING RESEARCH USING TECHNOLOGY: NEW PATHWAYS FORWARD

Jeffrey Kaye,<sup>1</sup> Zachary Beattie,<sup>1</sup> Nicole Sharma,<sup>1</sup> Thomas Riley,<sup>1</sup> Lisa Silbert,<sup>1</sup> Lisa Barnes,<sup>2</sup> Sarah Czaja,<sup>3</sup> and Hiroko Dodge<sup>1</sup>, 1. *Oregon Health & Science University, Portland, Oregon, United States*, 2. *Rush University, Chicago, Illinois, United States*, 3. *Weill Cornell Medical College, New York, New York, United States*

A profusion of technologies and protocols have been developed to more effectively assess and deliver care to older adults with cognitive impairment, challenged health and declining function. These technologies take advantage of important developments in sensing and pervasive computing, wearable technologies, mobile and wireless communications, and “big data” analytics. Despite great promise challenges remain to realizing their full potential and achieving wider uptake and dissemination in research and practice. This presentation will review and provide an overview of major technologies, their integration, and their use-cases, as well as key challenges present in the current landscape. The presentation will highlight ongoing developments addressing these challenges with particular attention to the Collaborative Aging Research using Technology (CART) initiative supported by the NIH and VA, an initiative directed toward providing an open technology research platform to be used by diverse investigators across the U.S. to facilitate and improve aging research using technology.

#### SESSION 4170 (PAPER)

##### UPDATES ON CURRICULAR INNOVATIONS IN GERONTOLOGY EDUCATION

##### AFU PRINCIPLES IN ACTION: ENGAGING STUDENTS THROUGH HANDS-ON AGE-RELATED ACTIVITIES

Cassandra Barragan,<sup>1</sup> and Stephanie Wladkowski<sup>1</sup>, 1. *Eastern Michigan University, Ypsilanti, Michigan, United States*

The Age-Friendly University (AFU) Initiative is a global network of universities working to embrace and promote

the growing population of older adults (OAs) on campuses. Integrating inter-generational learning is a proven benefit to share knowledge (Gerpott, Lehmann-Willenbrock, & Velopel, 2017) and to mutually benefit both older and more traditional learners (Pstross, Corrigan, Knopf, et al., 2017). To thoughtfully develop AFU initiatives on their campus, one midwestern university created an educational activity for students to better understand the needs of OAs. This presentation will cover results of this activity and offer suggestions for aging-focused learning activities. In winter 2019, 23 undergraduate students from 5 disciplines participated in a guided sensory activity with 5 Masters in Social Work (MSW) students that simulated impaired vision, hearing, and dexterity. Afterwards, using the AARP walking audit, they walked campus to understand challenges those with limitations might face. Students then completed a guided reflection and thought of ways to advocate for anyone with physical challenges, both off and on campus. This activity resulted in several successful learning outcomes and provided concrete experiences, establishing grounds to think about advocacy in a practical way. First, the undergraduate students presented their experiences at a campus-wide activism and advocacy event. They aimed to 1) increase awareness of the challenges those with visual and physical challenges and 2) promote the AFU initiatives. MSW students further analyzed their experience from a policy perspective and presented to the AFU steering committee with recommendations to influence policy in alignment with the AFU principles.

##### KNOWLEDGE OF AGEISM AND ATTITUDES ABOUT AGING AS A CORE COMPETENCY FOR HEALTH PROFESSIONALS

Sarah Marrs,<sup>1</sup> Tracey Gendron,<sup>1</sup> Leland Waters,<sup>1</sup> Jenny Inker,<sup>1</sup> and Maddie McIntyre<sup>1</sup>, 1. *Virginia Commonwealth University, Richmond, Virginia, United States*

Senior mentoring programs have been established that provide medical students exposure to a community-dwelling older adult mentor with whom they meet multiple times throughout the program. The goal of these programs is to expose students to healthy older adults, increase knowledge of geriatrics, and prepare them to care for an aging population. However, even while participating in a senior mentoring program, health professions students still demonstrate some discriminatory language towards older adults (e.g., Gendron, Inker, & Welleford, 2018). In fact, research suggests ageist practices occur, intentionally or not, among health professions in disciplines such as medicine, nursing, and social work and even within assisted and long-term care facilities (e.g., Bowling, 1999; Dobbs et al., 2008; Kane & Kane, 2005). We evaluated a senior mentoring program to gauge the impact of a new pedagogical approach and to gain a deeper understanding of the learning gained in relation to ageism and elderhood. This qualitative content analysis explored first-year medical students' opinions of their own aging and attitudes towards caring for older adults. Students (n = 216) participating in a brief curriculum model of a senior mentoring program responded to the following open-ended prompts before and after the program: 1) How do you feel about your own aging?; 2) How do you feel about working with older adult patients after you complete your