

# Thank You!

## Lifespan Alliance Research Day Judges

### MPSI Judges

**Shelly Jo Kraft, Ph.D.**

Department of Communication Sciences and Disorders

**Noel Kulik, Ph.D.**

Kinesiology, Health and Sport Studies

**Victoria Neale, Ph.D.**

Family Medicine and Public Health Sciences

### IOG Judges

**Allen Goodman Ph.D.**

Department of Economics

**Voyko Kavcic, Ph.D.**

Institute of Gerontology

**Mark Luborsky, Ph.D.**

Department of Anthropology/Institute of Gerontology



INSTITUTE OF GERONTOLOGY

&

MERRILL PALMER  
SKILLMAN INSTITUTE

*For Child & Family Development*

## 2017 Lifespan Alliance Research Day



Friday, February 10th

at

Wayne State University  
Charles Lang Freer House

&

Pauline Knapp Building

**Program**  
(9:00 am - 3:00 pm)

IOG Poster #23

**Lifespan Alliance Research Day**

**Age-Related Bias in FreeSurfer Hippocampal Segmentation Compared with Manual Demarcation**

- 9:00 am** Posters available for viewing by public  
Multi-Purpose Room, Pauline Knapp Building
- 9:45 am** Opening Remarks - Peter Lichtenberg, PhD  
Hoobler Lounge, Freer House
- 10:00 - 11:00 am** IOG Paper Presentations\*
- 11:00 - 12:00 pm** MPSI Paper Presentations\*  
\*Presentations in Hoobler Lounge, Freer House are 10 minutes long with 5 minutes for questions & discussion
- 12:00 - 1:00 pm** Lunch  
Hoobler Lounge, Freer House
- 1:00 - 1:15 pm** Remarks - Stephen M. Lanier, Ph.D.  
Professor of Pharmacology  
Vice President for Research  
Multi-Purpose Room, Pauline Knapp Building
- 1:15-3:00 pm** Poster Viewing & Judging  
Multi-Purpose Room, Pauline Knapp Building
- 3:00 pm** Award Presentations  
Carol Edwards, Chair, IOG Board of Visitors  
Debra Partrich, Chair, MPSI Board of Visitors

**Qijing Yu; Roya Homayouni, MA; Andrea Shafer, PhD; Naftali Raz, PhD & Noa Ofen, PhD**

**Introduction:** Hippocampus plays pivotal roles in aging and development, and there is great demand for high-throughput reliable methods of assessing its structural properties. The validity of automatic hippocampal segmentation methods has recently been challenged by findings suggesting age-related bias in older adults.

**Methods:** Here we examine the agreement between manual and an automated (FreeSurfer) estimates of hippocampal volume in a sample of healthy participants (age 5-25 years, N=102) by using the intra-class correlation measure (ICC3).

**Results:** A modest agreement was found: ICC(3) left: 0.58-0.82, right: 0.44-0.84, total: 0.64-0.84. FreeSurfer overestimated hippocampal volume, and more so in younger compared to older participants:  $F(1,99)=3.84$ ,  $p=0.053$ . Truncating the range of the FreeSurfer segmentation to match the range defined in the manual demarcation protocol eliminated substantially improved the agreement: ICC(3) left: 0.80-0.90, right: 0.78-0.91, total: 0.84-0.92. However, the age-dependent difference between FreeSurfer-generated hippocampal volume estimates became more prominent:  $F(1,99)=5.33$ ,  $p=0.02$  for Age  $\times$  Method interaction.

**Conclusion:** Our findings provide evidence of age-related bias in FreeSurfer segmentation and demonstrate that the bias is not attributable to the difference in the number of slices sampled along the longitudinal hippocampal axis. These results underscore the need for scrutiny of FreeSurfer-based findings in developmental research.



## **Sentence final particles as a potential clinical marker of autism in Chinese: a pilot study**

**Jinhan Yu, M.A., Doctoral Student**

**Introduction:** We investigated whether sentence-final particles (SFP) can be potentially used as a clinical marker for autism. SFP express emotive (e.g., sadness, anger) or syntactic function (e.g., yes-no or wh-question). Emotive SFP should be more difficult for children with autism compared to the syntactic SFP.

**Methods:** One child (age 7;11) and one adolescent (age 16) with autism attending a specialized school in Dalian, China, and one typically developing child (age 5;3) were visually presented with situations and heard sentences that described each scene. The sentences contained no prosodic information. Children used emoji with a happy, sad, and angry face and a question mark to judge each sentence for emotive content and syntactic type (i.e. interrogative or declarative). There were 30 items and 20 fillers (sentences without SFP).

**Results:** The older participant had higher accuracy than the two younger ones on the syntactic SFP, but not on the emotive one. The typically developing child was more accurate with emotive than with syntactic SFPs, while the two participants with autism had a high accuracy with syntactic SFPs but low accuracy in emotive SFPs.

**Conclusion:** SFPs may be useful as a clinical marker of autism in China, which currently lacks professional diagnosing tools.

## **The Lifespan Alliance for Health and Development**

In 2008, Dr. Peter Lichtenberg and the leadership teams of the Wayne State University (WSU) Merrill Palmer Skillman Institute for Child & Family Development (MPSI) and the Institute of Gerontology (IOG) created the Lifespan Alliance for Health and Development.

The Lifespan Alliance, while maintaining each Institute's independence, promotes collaboration between Institutes on research and research training, capitalizing on their shared experience in psychosocial and neurobehavioral research, as well as their unique combined expertise in developmental sciences and gerontology.

The Lifespan Alliance training programs bring together faculty and students from diverse disciplines including Anthropology, Education, Health Sciences (Obstetrics, Pediatrics, Psychiatry & Public Health), Infant Mental Health, Behavioral, Cognitive & Developmental Neuroscience, Communication Sciences & Disorders, Nursing, Political Science, Developmental & Clinical Psychology, Economics, Social Work, and Sociology to study health, well-being, human development, and successful aging, from the earliest preconception stages through infancy, childhood, adolescence, parenthood, and older ages.

Today we showcase some of the basic, clinical, community-based, and translational research within and across these disciplines by the graduate and undergraduate students of the IOG and MPSI. Here the Lifespan Alliance presents work by individuals who are becoming the next generation of leading researchers and practitioners, soon-to-be professionals who will generate new scientific knowledge and develop best practices for improving health and well-being across the lifespan, in Detroit and beyond.

MPSI Paper #1

## Using the Actor-Partner Interdependence Model to Assess Mother-Infant Contributions to Interactions during the Still-Face Paradigm

**Jordan L. Boeve, MA; Marjorie L. Beeghly, PhD; Kristyn Wong, PhD; Jessica L. Irwin, MA; Mahya Rahimian Mashhadi, MA; Ann Stacks, PhD & Moriah Thomason, PhD**

**Introduction:** The goal of this study was to use the Actor-Partner Interdependence Model (APIM) to describe maternal, infant, and dyadic contributions to affective interactions before and after a social stressor (maternal still-face) during the Still-Face paradigm (SFP).

**Methods:** The SFP consists of 3 successive 2-minute episodes: baseline parent-infant play, parental still-face, during which the parent holds an expressionless face, and reunion play. Participants were 85 mother-infant dyads from low-income backgrounds from a larger study who were videotaped in the SFP at 7 months postpartum.

**Results:** Mother-infant affect codes in each episode were evaluated using the APIM and structural equation modeling. Significant actor effects for positive affect were observed for both mother and infant; how positive one member of the dyad was during baseline play was associated with how positive that same individual was during reunion. The sole significant partner effect showed that mothers' positive affect during baseline play predicted infants' positive affect during reunion play.

**Conclusion:** Findings in this low-income sample show that both mothers and infants contribute to dyadic interaction processes. However, mothers appear to play a larger role in dyadic positive affect exchanges. Future research should focus on whether bidirectional mother-infant interactions predict later parental and child adaptation.

## Resting Functional Connectivity along the Long Axis of the Hippocampus in Subjectively Cognitively Impaired and Healthy Elders

**Raymond Viviano & Jessica S. Damoiseaux, PhD**

**Introduction:** Subjective memory complaints (SMC), a perceived decline in memory functioning without observed deficits on neuropsychological assessment, could be an important preclinical stage for dementia. This analysis evaluated anterior and posterior hippocampal functional connectivity differences between healthy older adults with and without SMC.

**Methods:** 46 older adults without and 28 with SMC were included in the analysis. Spherical anterior and posterior hippocampal regions of interest were determined for each individual separately based on gross anatomical features. Individual correlation maps were calculated by correlating the mean time-series of seed regions with the rest of the brain. Correlation maps were compared between older adults with and without SMC using non-parametric permutation testing while controlling for age and sex.

**Results:** Participants with SMC showed greater connectivity between right anterior hippocampus and cerebellum, and extrastriate cortex; and lower connectivity between left anterior hippocampus and right inferior parietal lobule, and cuneus compared to those without SMC ( $p < 0.005$ , uncorrected).

**Conclusion:** Our results reveal differences in anterior hippocampal connectivity in participants with SMC compared to those without, which is contrary to previous observations of differences in posterior hippocampal or default mode connectivity. Further research is needed to substantiate these findings.

## Age-related differences in the functional connectivity of the medial temporal lobe support successful memory encoding

Lingfei Tang, Andrea Shafer, PhD, Ryan Liddane,  
Hager Alkhafaji & Noa Ofen, PhD

**Introduction:** Recent neuroimaging evidence suggests that the functional maturation of the medial temporal lobe (MTL) contributes to age-related improvement in successful memory encoding. Limited evidence from studies in children suggests a differential pattern of functional connectivity between anterior and posterior portions along the long-axis of the MTL during rest. Little is known, however, about the age-differences in MTL functional connectivity that directly underlie successful memory formation, and whether the distinction between anterior and posterior portions of the MTL carry significant explanatory value in observed developmental effects.

**Methods:** We collected functional MRI data from 97 participants (ages 8-25) while they studied scenes for a later recognition test. Memory-related activation (for subsequently remembered versus forgotten scenes) was assessed in along the long-axis of the medial temporal lobe.

**Results:** Memory-related activation in anterior and posterior MTL increased with age, but not in the middle portion of the MTL. Anterior MTL regions showed age-related increase in coupling with regions in the occipital and temporal lobe. In contrast, posterior MTL regions showed age-related increase in negative coupling with regions in the default mode network.

**Conclusion:** These findings suggest that the protracted functional maturation along the long-axis in the MTL supports age-related improvement in memory functioning.

## Exploring the Superwoman: Parenting Strengths of Urban African-American Mothers

Patricia Richardson, MA; Hasti Raveau, MA;  
Iheoma Iruka, PhD & Erika Bocknek, PhD

Poster submitted to SRCD 2017 Richardson, P., Iruka, I., & Bocknek, E. L. Risk and resilience in African American parenting of young children. In E. L. Bocknek (Chair), Exploring the Superwoman: Parenting Strengths of Inner City African-American Mothers. Symposium submitted for presentation at the Society for Research in Child Development (SRCD) Biennial Meeting, April 6-8, Austin, TX.

**Introduction:** To manage multiple demands and stressors, feminist theory purports that African-American women adopt the superwoman framework. This schema may come at the cost of personal wellbeing, as African-American women are at higher risk for experiencing adverse psychological and physiological outcomes. This study will construct a parenting composite that is consistent with the superwoman framework and determine if this profile is associated with maternal wellbeing, and if it predicts toddler positivity and frustration after accounting for toddler gender and respiratory sinus arrhythmia.

**Methods:** The current study (N = 118) describes data from low-income, African-American mothers and their toddlers (TEDY study, PI Bocknek). Parent reframing was assessed via self-report; maternal positivity and use of commands was assessed during observed and coded tasks.

**Results:** Results revealed that the superwoman parenting composite was significantly related to maternal depression and significantly predicted toddler expression of frustration but not positive affect.

**Conclusions** These results suggest that there are meaningful associations among parenting positivity, commands, and the ability to reframe, among African-American mothers with high rates of exposure to trauma and other stressors. Further, this parenting profile may be protective for developing child regulatory abilities.

## Cumulative Risk and At-Risk Kindergarteners' Social Skills: The Role of Parent Representations of the Attachment Relationship

Lauren A. Sparks, BA; Christopher J Trentacosta, PhD; Caitlin  
McLear, PhD; Joanne Smith-Darden, PhD & Erika Owusu

From a poster accepted for presentation at the 2017 Society for Research in Child  
Development Biennial Meeting, Austin Texas

**Introduction:** The current study examined whether parents' representations of attachment relationships from the secure base script procedure predicted at-risk kindergarteners' social skills. Parent representations of secure attachment were also hypothesized to mediate the relationship between lower family cumulative risk and children's social skills.

**Methods:** Participants included 106 kindergarteners and their primary caregivers recruited from three urban charter schools in Detroit, Michigan for a longitudinal study. Parents reported on family risk factors (e.g., single parenthood) and completed the secure base script procedure. Teachers rated children's social skills during the fall and spring with the Social Skills scale of the Social Skills Improvement System.

**Results:** Lower levels of family cumulative risk predicted greater secure attachment representations in parents, and scores on the secure base script task predicted children's social skills in the spring. A significant indirect association between lower family cumulative risk and kindergarteners' social skills via parent secure base script scores was also found.

**Conclusion:** Parent representations of the attachment relationship provided an important link between the family's level of socio-demographic risk and low-income kindergarteners' social skills. Parenting interventions targeting families with high degrees of cumulative risk may be a helpful approach to increase children's social competence during the school transition.

## Onset Trajectories of Sexting and Other Sexual Behaviors Across High School: A Longitudinal Growth Mixture Modeling Approach

Davia B. Steinberg, MA; Valerie A. Simon, PhD;  
Bryan G. Victor, MSW; Poco D. Kernsmith, PhD  
& Joanne P. Smith-Darden, PhD

From a paper under review: Steinberg, D.B., Smith-Darden, J.P., Simon, V.A., Victor, B.G., Kernsmith, P.D. (2016). Onset trajectories of sexting and other sexual behaviors across high school: A longitudinal growth mixture modeling approach. *Journal of Adolescent Health*.

**Introduction:** Sexting is now commonplace during adolescence. The current study attempts to place sexting within the broader context of adolescent sexual development by assessing variations in the onset trajectories of a broad range of sexual behaviors, including sexting.

**Methods:** Participants included 429 high school students (54% female; 67% white) who completed assessments in 9th, 10th, and 11th grade as part of a larger longitudinal study. The questionnaire inquired about sexual behaviors including: handholding, kissing, undressing, sexting (sending sexual messages or pictures), oral sex, and sexual intercourse.

**Results:** Descriptive statistics indicated that the rate and increase in sexting (24% in 9th, 37% in 10th, 50% in 11th) were similar to that for undressing and genital contact behaviors. Growth mixture models using within-person data from each wave revealed four classes of students based on trajectories of onset for sexual behaviors. Within each trajectory class, sexting emerged in concert with genital sexual behaviors.

**Conclusions:** Our results suggest that sexting is a normative sexual experience that co-emerges with undressing and genital contact behavior. This information offers direction for more research on the implications of sexting for youths' psychosexual development as well as for curricula seeking to promote healthy sexual communication and behavior.

**Caring About Caregivers: Early Childhood Teachers’  
Internal Representations  
of Their Roles in Relation to Burnout**

**Britta Shine, MA**

Poster accepted to the Society for Research in Child Development Biennial Meeting,  
April 2017

**Introduction:** This study utilized survey data on a sample of 253 female early childhood educators throughout the United States to assess their internal representations of their role as caregivers, their perceptions of job stress, and the quality of their relationships with children on their risk for burnout. Demographic information was also collected.

Pearson’s  $r$  correlations were conducted on each independent variable (internal representations, job stress, and relationship quality) in relation to burnout. In addition, a stepwise multiple regression was used to examine the effects of each variable on burnout.

**Results:** Early childhood teachers’ internal representations of themselves as caregivers were most strongly associated with their risk for burnout. This represents the preliminary validation of a new measure, the Teacher Care Patterns Questionnaire (Shine, 2015). Job stress and relationships with children also showed significant correlations with the dimensions of burnout.

**Conclusion:** The present study’s findings suggest that attachment theory has applications to early childhood environments. Professionals in such settings are susceptible to high levels of job stress for many reasons, but it is their internal representations of self that most impact their risk for burnout. Future research and policy must therefore include a greater emphasis on mental health consultation for teachers.

**“Quality Time with Mom”:  
A New Measure and its Impact on Child Outcomes**

**Ahlam El Yaman, PhD candidate & Jennifer Ward-Batts, PhD**

**Introduction:** Using three waves of Panel Study of Income Dynamics Child Development Supplement data, we assess the effect of maternal employment on the quantity and quality of time spent with the child. We estimate child production functions to examine effects of quantity and quality of mother-child time on children’s behavioral and cognitive development.

**Methods:** First, we used child and family fixed effects estimations. Second, we used augmented value added production function models. We tested two measures of quality time: (1) simply active (engaged) versus passive time, and (2) a quality time index constructed via Multiple Correspondence Analysis.

**Results:** Working 40 hours per week reduces mother-child time by 4.8 hours, of which 2.4 hours are quality time. We find no significant effect of mother-child time on either cognitive or non-cognitive measures. Child cognitive outcomes are mainly affected by the mother’s educational attainment, while non-cognitive outcomes are shaped by her warmth and psychological distress, and neighborhood safety.

**Conclusion:** Parent’s education, parenting style, mother’s distress, and neighborhood characteristics have more impact on child development than does mother’s time input. Policies targeting child outcomes should focus more on those elements, and less on mother-child time and mother’s employment.

## The Psychological Dimension of Financial Decision-Making of Older Adults

Evan Z. Gross MA; Annalise Rahman-Filipiak, PhD;  
Lisa J. Ficker PhD & Peter A. Lichtenberg, PhD

From a thesis project in partial fulfillment of a Master's Degree  
in Clinical Neuropsychology

**Introduction:** Financial decision-making is important for older adults, but psychological aspects are not well understood. This study sought to develop the construct of Financial Decision-Making Self-Efficacy (FDMSE).

**Methods:** Participants (N = 200, mean age = 71.5) completed the Lichtenberg Financial Decision-Making Rating Scale (LFDRS) and a neuropsychological test battery. Factor analysis was used to measure the construct of FDMSE. Correlations, hierarchical regressions, and t-tests were conducted to study the correlates and group differences for vulnerable populations.

**Results:** A single factor accounted for 42.2% of the variance in FDMSE, and the construct had adequate internal consistency (Cronbach's  $\alpha = .73$ ). FDMSE was positively associated with executive functioning but not associated with financial skills or other cognitive domains. People with impaired financial decisional ability, with a history of elder financial exploitation, or with overall poor performance on neuropsychological tests had lower scores than non-impaired, non-exploited, and cognitively healthy participants.

**Conclusion:** Our findings highlight the importance of psychological aspects of financial decision-making. The construct of FDMSE is associated with psychological vulnerability to financial exploitation and poor decision-making. FDMSE may provide unique information about an older adult's financial decision-making ability, which would be useful to health care, legal, and financial professionals.

## Item and Associative Memory Development across Age

Siri Sarvepalli, David Chen, Vitaliy Galer, Dana Anderson,  
& Noa Ofen, PhD

**Introduction:** Memory is an essential cognitive ability which is vital in recognizing people, places, and objects in everyday life. It can be functionally differentiated into two forms: item memory and associative memory. Associative memory is thought to follow a more protracted developmental trajectory compared to item memory.

**Methods:** We tested item and associative memory in individuals 5-20 years who studied pairs of line drawings; also, a subset of the participants completed the task using word pairs as the studied stimuli. In each experiment, participants studied image pairs that were shown one after another. This was followed by two recognition tests, one showing single images to test item recognition, and another showing pairs to test associative recognition.

**Results:** Participants demonstrated greater memory performance in the item test than in the pair test. Adolescents and adults scored higher than children across stimulus and test types.

**Conclusion:** Consistent with current associative memory development theory, memory performance in the pair test improved to a greater extent from childhood to early adulthood compared to that in the item test. Our findings support the notion of protracted associative memory development and demonstrate the robustness of the phenomena in a wide age range and across stimuli types.

## Effects of the Great Recession on Older U.S. Workers and their Compensation, including Fringe Benefits

**Indrakshi Roy**

**Introduction:** Although the economic crisis of 2008, known as the great recession, is now considered over, its impacts are expected to last well into the future. This study examines the prevalence and magnitude of the effects of the recession on the work status of U.S. adults in late mid-life, ages 45 to 64, and the compensation of workers in this age range, including employer-sponsored fringe benefits.

**Methods:** Longitudinal and nationally representative data from the ongoing Health and Retirement Study are used for the analysis. For adults ages 45 to 64, their work status, workers' earnings, and the receipt of fringe benefits will be examined biennially over the period 2000-2014. Fringe benefits include the receipt of employer-sponsored health insurance, retiree health insurance among those who were retired, pension benefits, vacation time, and sick time.

**Results:** This study may reveal that in addition to reductions in employment, some older workers experienced an erosion in their fringe benefits. For example, some may have lost employer-provided health coverage or had to pay much more out-of-pocket towards their premiums, and others may have experienced reductions in other fringe benefits.

**Conclusion:** Understanding the various disruptive impacts of this major financial downturn is important so we can learn from the past. The findings from this study may shed more light on how to strengthen the safety nets in society, especially in the areas of health insurance and pension plans.

## Mild Cognitive Impairment Growth Trajectories: A Latent Class Growth Analysis

**Andria L. Norman, MA; John L. Woodard, PhD  
& Wassim Tarraf, PhD**

Portions presented at the Gerontological Society of America Annual Meeting  
(New Orleans, 2016)

**Introduction:** Reversion rates from mild cognitive impairment (MCI) to normal cognition range from 4% to 55%, suggesting a high potential for false positive MCI diagnoses. Limitations of prior MCI follow-up research include using few longitudinal data points (< three), using only the first and last data point despite multiple longitudinal data points, and using varying numbers of subjectively-defined cognitive trajectories.

**Methods:** This study used the National Health and Aging Trends Study, consisting of 6,503 Medicare beneficiaries, to address these limitations. Latent classes of cognitive trajectories were statistically determined for the sample. MCI status was determined independently for each of five years of participation based on impairment in one or more cognitive domains (orientation, executive/visuospatial abilities, verbal memory).

**Results:** A latent class growth analysis of MCI status identified that both 4- and 5- class solutions provide adequate fit, with statistical preference for 5-classes. The five-class model of cognitive trajectories was: Stable No-MCI (80%), Progressing MCI (13%), Stable MCI (4%), MCI reversion (2%), No-MCI to MCI (1%).

**Conclusion:** The observed statistically-derived cognitive trajectories identify possible baseline factors associated with derived trajectories. Incorporating these baseline factors into the diagnostic process may enhance the accuracy of MCI diagnosis, thereby reducing false positive diagnoses.

## Relationships between Resting State Default Mode Connectivity and Semantic Memory Processing

**Jonathan D Sober, MA; Armin Iraj, MS;  
Mike A Sugarman, PhD; Andria L Norman, MS;  
Evan Z Gross, MA; Richard J Genik II, PhD  
& John L Woodard, PhD**

Abstract submitted to 2017 American Psychological Association conference

**Introduction:** Differences in resting state functional connectivity (RSFC), particularly in the Default Mode Network (DMN), have been observed in persons at risk for Alzheimer's disease (AD). We investigated the relationship between RSFC of the posterior cingulate cortex (PCC), a region implicated in both the DMN and semantic memory retrieval, and performance on semantic memory tasks.

**Methods:** Fifteen older adults underwent RS-fMRI and task-activated fMRI using the FNMT, Categories, and Attributes tasks. Independent component analysis (ICA) was performed to extract the DMN. A mask of the PCC was used to calculate the average RSFC for each subject. The calculated connectivity value was correlated with performance on the semantic memory tasks.

**Results:** Individuals with greater PCC connectivity had significantly faster RTs and higher accuracy during correct rejection of non-famous names on the FNMT. No significant correlations were observed between PCC connectivity and behavioral performance for famous names for the FNMT and famous or non-famous names for the Categories or Attributes tasks.

**Conclusions:** These results provide partial support for the idea that RSFC of the DMN within the PCC could reflect the functional integrity of the semantic memory system and may be involved in memory search processes associated with accurate person-familiarity decisions.

## Sexual Subjectivity in Lesbian, Gay, and Bisexual Emerging Adults

**Zenaida Rivera, MA**

From a Master's Thesis "Sexual Subjectivity in Lesbian, Gay, and Bisexual Emerging Adults" proposed on December 5, 2016.

**Introduction:** Although developmental psychologists have articulated a need for more competency-based research on sexual development, research with sexual minorities has been hampered by a lack of validated measures. The current study reports on a national web-based survey to assess the reliability and validity of a measure of sexual self-concept with emerging adults who identify as lesbian, gay, or bisexual LGB).

**Methods:** The primary measure for this presentation is the Sexual Subjectivity Inventory, which measures a key facet of sexual self-concept and has been validated in heterosexual samples. Participants include 768 LGB individuals between the ages of 18-25 years from across the U.S. who completed our online study.

**Results:** Data collection is completed and analyses are underway. The poster will present (1) preliminary data on the reliability of this measure by gender and sexual orientation; (2) evidence of concurrent validity, as assessed by relations with sexual identity development, sexual health, and general well-being.

**Conclusion:** A validated measure of sexual subjectivity for LGB youth would be a substantive contribution that would advance theory, research, and sexual health promotion in a holistic, resiliency and competency-based framework.

## Semantic Representation of Rapidly Presented Visual Images Across Ages

Sruthi Ramesh; David Chen, PhD; Sadia Ghazi, BS;  
Qijing Yu, BS; Rebecca Schwarzlose, PhD & Noa Ofen PhD

**Introduction:** In our previous studies, we found adults substantially relied on semantic information in recognition tests of rapidly presented images. It would be of theoretical importance to examine whether this pattern is true in children, given that neural correlates that support visual perception, semantic encoding and recognition are still developing.

**Methods:** 106 healthy individuals of two age groups (7-17 years vs 18-28 years) were tested in this study. We used a novel Rapid Serial Visual Presentation (RSVP) task, which measures the recognition of rapidly presented images, while manipulating test time, inter-stimulus interval (ISI), and image.

**Results:** A main effect of age was observed, with adults being better than children in recognition. In both age groups, ISI had a significant impact in the delayed recognition test, meaning stimuli presented with a greater ISI were recognized more frequently; however, ISI had no such effect in the immediate recognition test for either group.

**Conclusion:** Overall, our preliminary findings suggest that there may not be a significant difference between children and adults in the extent of semantic information reliance and the effects of ISI and test time on visual recognition; i.e., the patterns in visual recognition observed in adults are likely maintained from childhood.

## How Effective is Foreign Aid at Improving Population Longevity and Health Outcomes in Recipient Countries?

Mohammad Usama Toseef

**Introduction:** Since the United Nations' establishment of the Millennium Development Goals (MDGs) in 2000, the world has observed an increasing trend in foreign aid provided by more affluent countries to developing nations. This paper examines whether foreign aid has been effective at improving the health of citizens in recipient nations since establishment of the MDGs.

**Methods:** Three facets of population longevity and two health outcomes were examined: infant mortality, life expectancy, the annual death rate, and immunizations against measles and DPT. Using a panel data set covering 103 developing countries, observed annually over 2001-2014, fixed-effects multivariate regression models were estimated for the population health measures.

**Results:** The findings reveal that foreign aid has had mixed effects on population longevity and health outcomes since 2000. Foreign aid has raised life expectancy and reduced deaths in developing countries; however, it has not reduced infant mortality rates nor raised immunization rates.

**Conclusion:** This partial good news suggests the MDGs have achieved modest success at improving the effectiveness of foreign aid to developing countries. In light of these findings continued monitoring of the relationship between foreign aid and health outcomes would be both valuable and prudent.

2017

## LIFESPAN ALLIANCE

The Merrill Palmer Skillman Institute  
&  
The Institute of Gerontology



## POSTER PRESENTATIONS

### Diabetes-related Cognitive Change in the Wisconsin Longitudinal Study

Ye In Oh, BS & John L. Woodard, PhD

**Introduction:** Research on the cognitive effects of diabetes is mixed, and longitudinal studies are few. This study utilized the Wisconsin Longitudinal Study (WLS) to examine late-life cognitive effects of diabetes and possible prodromal cognitive changes.

**Methods:** Participants were a subset of the WLS sample (5598 persons) evaluated in both 2003 and 2011. Measures of working memory, executive functioning, semantic memory (SM), and immediate and delayed episodic memory were examined. Independent samples t-tests compared diabetic and healthy individuals in 2003 and 2011. General linear models investigated cognitive changes for groups (healthy controls (HC), prodromal, and diabetes) over time using raw and regression-based change scores (RBCs).

**Results:** Persons with diabetes (predominantly Type II) showed decreased cognitive performance compared to HC. Diabetes did not accelerate age-related cognitive changes. RBCs for prodromal individuals on SM showed significant differences from HC but not from diabetic individuals. However, RBCs for prodromal individuals on all other cognition measures showed significance differences from diabetic individuals but not from HC.

**Conclusion:** SM showed earlier performance reductions in prodromal individuals compared to other cognitive outcomes. This study examined diabetes-related cognitive change in one of the largest sample sizes to date and documents a possible early cognitive marker of diabetes risk.

## **Barriers, Motivations and Preferences for Physical Activity among African American Older Adults**

**Bradley Kendall, MS and Neha P. Gothe, PhD**

**Introduction:** According to the CDC, less than 11% of adults over the age of 65 meet the 2008 Physical Activity Guidelines for Americans. Among minority populations, only 5% of non-Hispanic Black older adults met the guidelines. Much of the difficulty encountered in promoting PA within African American urban communities seems to result from a limited understanding of psychosocial factors which impact the adoption and maintenance of PA.

**Methods:** Three FGs were conducted among African American older adults, FG 1 [N=7, 64.57 ± 5.44]; FG 2 [N=7, 61.86 ± 1.77]; and FG 3 [N=7, 61.29 ± 4.19]. Questions posed to each focus group targeted participant barriers, motivators and preferences of PA.

**Results:** Common barriers to physical activity were: (1) pain; (2) weather; (3) and crime. The most prominent motivator of physical activity among the participants was the availability of group activities. Participants' motivation also depended on their level of enjoyment in the activity as well as the associated health benefits.

**Conclusion:** These findings highlight challenges to address when implementing PA programs for African American populations. Future research should involve development of group based PA interventions with a strong emphasis on social support to promote a healthy lifestyle among African American older adults.

## **Maternal Attachment Representations of the Infant in the First Year of Life: the Influence of Prenatal Depression and Relational Factors.**

**Fatimah Alismail, MA; Kristyn Wong, PhD; Ann M. Stacks, PhD; Marjorie Beeghly, PhD & Moriah Thomason, PhD**

**Introduction:** The current study examined the predictability of prenatal factors, including depression, reflective functioning (RF), and romantic attachment style, on maternal WMCI at seven months postpartum.

**Methods:** The participants were 74 mothers, a subsample of the Perinatal Imaging of Neural Connectivity study (PINIC). Data from the current study were collected using semi-structured interviews, including the Pregnancy Interview-Revised (PI-R) and the Working Model of the Child Interview (WMCI); and self-report questionnaires. Data was analyzed using Multinomial Logistic Regression.

**Results:** When the variables were examined separately, the results revealed that maternal depression was not related to the WMCI. However, both the prenatal RF and romantic attachment style predicted the WMCI. When maternal RF was examined in conjunction with romantic attachment style, maternal reflectivity predicted the WMCI representations over and beyond the impact of romantic attachment style. Nevertheless, when the romantic attachment scales were combined to represent one single security score, the results revealed that both prenatal RF and romantic attachment have unique contributions to mothers' WMCI.

**Conclusion:** The findings of this study suggest that both maternal RF during pregnancy and the security of the romantic attachment protect mothers from developing unbalanced representations, especially disengaged representations, which support the intergenerational transmission of attachment.

## Systematic Review of the Relationship Between Hippocampal Volume and Memory Performance in Preterm-Born Individuals

Dana Anderson, MA; Qijing Yu, Jason Roberson, Jamie Piercy, MA; Andrew Heitzer, MA; Sarah Raz, PhD & Noa Ofen, PhD

**Introduction:** Preterm birth is associated with alterations in hippocampal structure and memory deficits; however, the nature of this relationship is not fully understood. A systematic review of available literature examined the hypothesis that reduction in hippocampal volume is associated with poorer memory function in individuals born preterm.

**Methods:** We conducted a thorough search of empirical studies including preterm participants, volumetric data, memory performance data, and sufficient information for effect size calculation. The initial search yielded 280 articles; only five met inclusion criteria. Quantitative integration was based on a random effects model. Effect sizes belonged to the Pearson's  $r$  family.

**Results:** The summary effect size was small-to-medium, but suggested a significant positive relationship. However, only 4% of the variance in memory performance was explained by hippocampal volume.

**Conclusion:** Interpretation must take into account the small number of studies included in this review. Although this relationship may differ by hemisphere, there was insufficient reporting to investigate possible differences. The results from this review suggest that the relationship between hippocampal volume and memory differs between preterm and full term individuals. Additional studies of this relationship are needed in order to establish the strength of this relationship, and investigate potential differences across hemispheres.

## Neural Correlates of the Development of Spatial Navigation Ability

Sanaya Irani; Sruthi Ramesh; Qijing Yu; Dana Anderson; Lingfei Tang; Andrea Shafer; Sarah Raz, PhD & Noa Ofen, PhD

**Introduction:** This study tests the developmental trajectories of spatial navigation from childhood through young adulthood and the underlying neural substrates using a virtual Morris Water Maze in 70+ participants aged 5-21 years.

**Methods:** Participants completed 15 navigation trials using a joystick to reach a platform hidden in the virtual pool. To measure spatial navigation, we calculated time, distance and complexity or fractal dimensionality (FD) of participants' paths traveled to reach the target. We tested age and sex effects on navigation performance. Hippocampal volume and intracranial volumes of all our participants were manually demarcated by tracers with high reliability.

**Results:** We found that older participants traveled shorter distances and males traveled less complex paths than females. We also found that larger hippocampal volumes were associated with less time required to reach the platform and were marginally associated with distance. Interestingly, hippocampal volumes were not associated with path complexity, previously found to be related to specific hippocampal subfields.

**Conclusion:** We found an age and larger hippocampal volume related increase in navigation ability. We are interested in further examining the relation between navigation and hippocampal subfields to study the functional specialization of the hippocampal subfields in navigation in a typically developing population.

## Dispositional Mindfulness and Quality of Parental Bonding Moderates Depression in Urban Expectant Parents

Laurel Hicks, LMSW; Carolyn Dayton, PhD  
& Suzanne Brown, PhD

**Introduction:** Quality of prenatal bonding is known to contribute to healthy pre- and post-natal parenting behaviors for mothers. Maternal depression during the perinatal period often disrupts bonding with the fetus as well as increases risks such as prematurity, low birth weight and infant development. Less is known, however, about this process in fathers. In a sample of expectant mothers and fathers who are considered at high risk for insensitive and harsh parenting due to contextual risk factors such as exposure to violence and poverty, the current study hypothesized that dispositional mindfulness would moderate the effects of depressive symptoms on quality of prenatal bonding.

**Methods:** Self-report measures of dispositional mindfulness, depressive symptoms, and quality of bonding from expectant parents were administered. Data were modeled using PROCESS in SPSS.

**Results:** The model was significant. For individuals reporting low levels of mindfulness, high depression scores were associated with lower levels of prenatal bonding. In contrast, for individuals who reported high levels of dispositional mindfulness, depressive symptoms were not significantly related to quality of bonding, except for parents with high depression scores.

**Conclusion:** These findings suggest that high levels of mindfulness may buffer the influence of depression on prenatal bonding.

## Age Related Differences in the geomT2 Relaxation Assessed Using Multi-Echo T2 Imaging

Muzamil Arshad, BS; Jeffrey A Stanley, PhD; Naftali Raz, PhD

**Introduction:** Subcortical white matter (WM) consists of both myelin and intra/extracellular (IE) compartments. While age differences in the myelin compartment have been investigated the much larger IE compartment remains relatively unexplored. This study investigates age differences in the geometric mean T2 (geomT2) of the IE compartment.

**Methods:** Participants were recruited from the Detroit Metropolitan area (N = 85) with an age range between 9.9 – 84.8 years. Images were collected on a 3T Siemens Verio system using the 3D-GRASE sequence. Six subcortical WM tracts were analyzed. A regularized NNLS algorithm was used to fit the multi-echo data for each tract. A repeated measures general linear model (RM-GLM) was used to investigate both linear and quadratic effects of age across the tracts.

**Results:** Both the linear and quadratic effects of age varied across the tracts.

**Conclusion:** We demonstrate that the geomT2 provides further characterization of subcortical WM microstructure. The effects of age are not uniform across subcortical WM tracts with some regions demonstrating quadratic effects of age while linear age effects are observed in other regions. Future studies should investigate the cognitive correlates of the observed age differences in the geomT2 of the IE compartment.

## The Role of Measurement Bias in the Stability of Personality Ratings Across the Lifespan

Reed J. Bramble; Gregory R. Thrasher, Andrew P. Tenbrink,  
& Boris B. Baltes, PhD

**Introduction:** Individuals who tend to rate personality items inconsistently (i.e., with greater internal variance) may appear to be less stable over time. The current study: 1) presents cognitive ability as an early predictor of personality stability, and 2) evaluates the influence of cognitive ability above and beyond measurement bias.

**Methods:** The Wisconsin Longitudinal Study was analyzed with personality collected at three time points from 1992 to 2011. Structural equation modeling was employed for hypothesis testing, with mean-level personality traits and internal consistency bias included as covariates.

**Results:** Individuals with higher levels of intelligence display a form of measurement bias in personality data, such that their ratings across items in a subscale are less variable. Additionally, there is a strong positive relationship between internal consistency and stability in personality ratings. Controlling for internal consistency appeared to reduce the effect of cognitive ability on personality stability, but not completely.

**Conclusion:** People who exhibit a more internally consistent rating style (such as those with high cognitive ability) are much more likely to appear stable in their personalities as they get older. However, not all of the variance could be explained by rating style, suggesting that intelligent individuals may actually have more stable personalities into late adulthood.

## Feelings about the Baby at 6 months in Planned vs. Unplanned Pregnancy

Amy E. Graham, BA; Jessica R. Beatty, PhD;  
Casey R. Thacker, MPH; Ebonie Guyton, MPH  
& Steven J. Ondersma, PhD

**Introduction:** The negative consequences of unintended pregnancy are well known, including increased likelihood of abortion, child maltreatment, economic disadvantage, and substance use. However, little is known about how mothers with unintended pregnancies feel about the baby at the time of birth, and if these feelings change in the six months after delivery.

**Methods:** Women (N= 500) were recruited at the time of delivery as a part of a larger study examining the validity of an indirect screener for substance use, and assessed 3 and 6 months postpartum. Seventy-five percent of the sample (N=375) reported that their pregnancy was unplanned.

**Results:** As expected, there were significant difference between those with planned vs. unplanned pregnancies with regard to how they felt when learning they were pregnant. However there were no significant differences between groups about how they felt about the baby when it was born, or six months later, despite more depression, violence and drug use among those with unintended pregnancies.

**Conclusion:** Unintended pregnancies can carry serious consequences for both mother and baby. However, our findings indicate that these do not change the way the mother feels about her baby once it's born or at 6 months postpartum.

## Differences in Prenatal Maternal and Paternal Bonding with the Developing Fetus

Jessica Goletz, BA; Carolyn Dayton, PhD; Laurel Hicks, LMSW

**Introduction:** This study examined differences in the ways in which mothers and fathers form a relationship with the developing fetus in the prenatal period.

**Methods:** Mothers and fathers in the third trimester of pregnancy were given quantitative questionnaires to evaluate the ways in which 1) they had been interacting with the fetus in utero, and 2) the quality of prenatal bonding they felt toward the fetus.

**Results:** A positive correlation was found between mothers' quality of bonding with the fetus and engagement in physical bonding behaviors (e.g. rubbing the belly). Conversely, a positive correlation was found between fathers' quality of bonding with the fetus and engagement in thought behaviors (e.g. imagining what the infant would look like). No significant correlations were found between fathers' bonding quality and physical behaviors or between mothers' bonding quality and thought behaviors.

**Conclusion:** The findings suggest differences in the ways in which mothers and fathers begin forming a relationship with their developing fetus. Understanding the differences in which mothers and fathers form a bond with their infant prenatally may help inform the ways in which prenatal interaction with the fetus is suggested to parents.

## Memory and Learning over Trials in Octogenarians and Centenarians

Rebecca J Campbell, BA; John L Woodard, PhD; L. Stephen Miller, PhD; Adam Davey, PhD; Peter Martin, PhD; & Leonard W Poon, PhD

**Introduction:** The Fuld Object Memory Evaluation is used to assess memory in older adults. Administration yields five recall indices: total recall, storage, retrieval, repeated retrieval, and ineffective reminders. Age-related differences for total recall over trials are well-documented, but the latter four indices have been infrequently investigated. The present study used latent variable growth curve modeling (LGCM) to examine age-related differences in more specific mnemonic processes that may underlie learning over trials.

**Methods:** Participant data were drawn from the Georgia Centenarian Study. LGCM used age cohort (octogenarians (n=80) or centenarians (n=244)) as a predictor of change on the four indices over trials.

**Results:** Age cohort was a significant predictor of initial scores on all four indices, such that octogenarians demonstrated greater initial recall, greater repeated retrieval, and fewer ineffective reminders than centenarians. Octogenarians also retrieved more items across trials, and increased the number of consecutively remembered items across all trials.

**Conclusions:** Results suggest that age cohort differences in the rate at which they learn new information parallel age-related reductions in the ability to store and recall new information over trials. Centenarians' decreases in total recall, relative to octogenarians, may be influenced more by inefficient retrieval than by storage deficits.

## Community Needs and Concerns for Future Multicultural Adult Day Programming

Caitlin Cassady, LCSW; Faith Hopp, MSW, PhD; Kristine Adjrouch, PhD, Jennifer Mendez, PhD  
& Amne Darwish-Talab, B.A.

**Introduction:** Aging populations in the United States are becoming increasingly diverse. Although studies suggest that communities composed of ethnic minority groups have unique needs and concerns regarding adult day programming, there is a dearth of research in this area.

**Methods:** This qualitative study aims to assess current understandings, concerns, and needs regarding the potential for older adult day programming in a local, predominantly Arab American community. Five focus groups were conducted with older adults, caregivers, and local agency staff. Eight interviews were conducted with local community leaders.

Thematic analysis was used to analyze transcripts of focus groups and interviews locating common themes within and across groups reflecting needs and concerns regarding diverse adult day programming.

**Results:** Emerging themes included 1) practical concerns for programming, such as safety, transportation, and funding; and 2) the need for culturally tailored services to promote socialization and education, such as intergenerational programming and forms of gathering that mirror current and historical practices.

**Conclusion:** This study affirms the need for further research on unique cultural needs in local ethnic communities of aging adults. Understanding these needs is crucial to providing culturally appropriate services to increasingly diverse populations of older adults.

## Family Cohesion and Toddlers' Behavior Problems: The Moderation of Negative Family Interactions and Parent Emotion Dysregulation.

Laura M. Crespo, MA; Christopher J. Trentacosta, PhD;  
Marjorie Beeghly, PhD; Hasti Raveau, MA; Lauren Sparks, MA  
& Erika L. Bocknek, PhD

From a poster accepted for presentation at the 2017 Society for Research and Child Development Biennial Meeting, Austin Texas

**Introduction:** The current study examined the role of the family system in predicting children's externalizing and internalizing problems. It was hypothesized that young children from highly negative families or who experience high levels of parent emotion dysregulation may not benefit from high family cohesion.

**Method:** Participants were 81 families: toddlers aged 24-31 months, their mother, and a second caregiver (63% biological fathers). An observational triadic shared book reading task was videotaped and coded for interaction style. Parents completed the Family Adaptability and Cohesion Scale, Emotion Dysregulation Scale, and the Child Behavior Checklist.

**Results:** Second caregiver-reported cohesion was inversely associated with externalizing problems when observed negativity was 1 SD below the mean, but not associated with behavior problems when negativity was 1 SD above the mean. Second caregiver-reported cohesion was negatively associated with externalizing problems when dysregulation was 1 SD below the mean, but not when it was 1 SD above the mean.

**Discussion:** The impact of second caregiver-reported cohesion on externalizing problems was limited to family contexts with low family negativity or low parent emotion dysregulation. These findings suggest that it is crucial to examine multiple aspects of the family system and obtain perspectives of multiple caregivers.