

**GENE-ENVIRONMENT INTERPLAY CONTRIBUTES TO HEALTH, WELL-BEING AND COGNITIVE PERFORMANCE IN MID TO LATE ADULTHOOD**

C.A. Reynolds, *UC Riverside, Riverside, California*

Gene – environment interplay may be important across aging domains. GxE interactions were evaluated for depressive symptoms, BMI, and cognitive performance in eight IGEMS studies from Denmark, Sweden, and the US. Analyses considered mixture distributions of within pair differences among identical twins. Results for the full sample, within country, and within sex, suggested GxE for depressive symptoms ( $p < 1.62E-05$ ) and for BMI ( $p < 2.26E-06$ ). GxE was suggested across cognitive domains in the full sample ( $p < 5.29E-03$ ), and generally across country and sex. Trends over age bands (<50, 50-59, 60-69, 70-79, 80+) suggested GxE for depressive symptoms until age 80, peaking at 60-69 years. For BMI, GxE trends were nonlinear with peaks before 50 and after 70 years. For cognition, peak GxE was observed in midlife for speed but later adulthood for verbal ability and working memory. Peak periods of GE interplay in health, wellbeing and cognitive traits may coincide with salient periods of age-related change.