Speaker: *Christina Carlisi*
Presentation title: Association of subcortical grey-matter volumes with life-course-persistent antisocial behavior in a population-representative longitudinal birth cohort
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Neuropsychological evidence supports the Developmental Taxonomy Theory of Antisocial Behavior, suggesting that abnormal brain development distinguishes life-course-persistent from adolescence-limited antisocial behavior. Recent neuroimaging work confirmed that prospectively-measured life-course-persistent antisocial behavior is associated with differences in cortical brain structure. Whether this extends to subcortical brain structures remains uninvestigated. This study compared subcortical grey-matter volumes between 672 members of the Dunedin Study previously defined as exhibiting life-course-persistent, adolescence-limited or low-level antisocial behavior based on repeated assessments from ages 7-26. Grey-matter volumes of 10 subcortical structures were compared across groups.
The life-course-persistent group had lower volume of amygdala, brain stem, cerebellum, hippocampus, pallidum, thalamus, and ventral diencephalon compared to the low-antisocial group. Differences between life-course-persistent and adolescence-limited individuals were comparable in effect-size to differences between life-course persistent and low-antisocial individuals, but were not statistically significant due to less statistical power. Grey-matter volumes in adolescence-limited individuals were near the norm in this population-representative cohort and similar to volumes in low-antisocial individuals. Although this study cannot establish causal links between brain volume and antisocial behavior, it constitutes new biological evidence that all people with antisocial behavior are not the same, supporting a need for greater developmental and diagnostic precision in clinical, forensic, and policy-based interventions.