



# UConn BIRC Speaker Series

Tuesday, April 20<sup>th</sup> from 12-1:30 pm ET via Zoom

## Human visual cortex as a window into the developing brain

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**Abstract:** Human ventral temporal cortex (VTC) contains category-selective regions that respond preferentially to ecologically-relevant categories such as faces, bodies, places, and words, which are causally involved in the perception of these categories. How do these regions develop during childhood? We discovered that from young childhood to the teens, face- and word-selective regions in VTC expand and become more category-selective, but limb-selective regions shrink and lose their preference for limbs. Critically, as a child develops, increases in face- and word-selectivity are directly linked to decreases in limb-selectivity, revealing that during childhood limb-selectivity in VTC is repurposed into word- and face-selectivity. This provides the first empirical evidence for cortical recycling of function during childhood development. Quantitative MRI measurements further reveal that regions that are functionally developing are also structurally developing as their gray matter and adjacent white matter show tissue proliferation. These data not only show elucidate microstructural and functional development of human high-level visual cortex, showing that they are intimately linked, but also show that cortical development does not always follow monotonic trajectories. Together, these findings have important implications for understanding neurodevelopment delays and disorders during childhood development.

*Bio: Professor Grill-Spector's research uses innovative neuroimaging, computational, and behavioral methods to investigate the neural mechanisms in the human brain that enable visual perception. Additionally, she examines how visual areas develop functionally and structurally during childhood as well as how visual experience during childhood sculpts the functional neuroarchitecture of the brain. She is highly involved in both the Psychology Department as Director of Graduate Studies (DGS). Professor Grills-Spector also co-leads an interdisciplinary team of scientists of the NeuroDevelopment Big Idea Project and co-chair the organizing committee for our bi-annual retreat at the Wu Tsai Neurosciences Institute.*

Remote access Registration: <https://bit.ly/3mPbZR2>

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**\*Please note: You *must* register in advance via Zoom\***

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