CELLULAR & SYSTEMS NEUROSCIENCE SEMINAR SERIES

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Understanding the neural basis of social attachment

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Social attachments play a central role in most, if not all, levels of human interaction, from parent-child attachment, friendship and social affiliation, to enduring partnerships with mates. It has been difficult to study social attachment because traditional genetic lab model animals do not exhibit adult social attachment behaviors. Thus, the analysis of social attachment has been resistant to genetic and neurobiological approaches. Prairie voles, in contrast, display social attachment as adults such that mating partners form an enduring pair bond and display complex attachment behaviors, such as social monogamy and bi-parental care. Pioneering work in the prairie vole has identified vasopressin (Avp) and oxytocin (Oxt), as critical mediators of pair bonding in voles and social cognition and behaviors in humans. We are, for the first time, well-poised to understand how specific genes and pathways function in the circuits underlying social attachment and contribute to distinct aspects of attachment and cognitive processes. Here we present our analysis of the behavioral, molecular, and physiologic consequences of loss of OxtR function on pair bonding and attachment behaviors.