Although substance use disorders (SUDs) occur commonly in patients with schizophrenia and significantly worsen their clinical course, the neurobiological basis of SUDs in schizophrenia is not well understood. Therefore, there is a critical need to understand the mechanisms underlying SUDs in schizophrenia in order to identify potential targets for therapeutic intervention. Since drug use usually begins in adolescence, it is also important to understand the long-term effects of adolescent drug exposure on schizophrenia- and reward- related behaviors and circuitry. This talk will combine pharmacological, behavioral, electrophysiologic (local field potential recordings) and pre-clinical magnetic resonance imaging (resting-state functional connectivity and magnetic resonance spectroscopy) approaches to study these topics with an eye toward developing better treatment approaches.