



Neurobiology of Addiction: Understanding the Brain to Improve Clinical Care

Monday, March 23

Andrews Conference Center at WakeMed
3024 New Bern Avenue, Raleigh

Lunch: 11:30

Presentation: noon - 1 PM

Presenter: **R. Dewayne Book, MD**



Please visit the **Wake AHEC website** or scan this QR code.

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The following credits will be provided by Wake AHEC:

- AMA PRA Category 1 Credit TM 1.00
- Contact Hours (category A) CE for NC Psychologists 1.00
- Contact Hours 1.00
- NBCC Hours 1.00
- CME for Physician Assistants 1.00

Description

This training examines the neurobiological foundations of substance use disorders through a clinically practical lens. Participants will explore how genetic vulnerability and environmental exposure interact to shape addiction risk and how repeated substance use alters brain structure and function—particularly within the reward system, stress circuitry and executive functioning networks.

We will review how key neurotransmitter systems—including dopamine, glutamate, GABA and the endogenous opioid system—are disrupted in active addiction and early abstinence. Special attention will be given to how chronic substance exposure reshapes the prefrontal cortex, amygdala and striatal pathways, driving tolerance, withdrawal, craving and relapse vulnerability.

Participants will leave with:

- A working understanding of how addiction hijacks survival circuitry
- Insight into the neurobiology of craving, compulsivity and relapse
- Clarity on how predisposition influences vulnerability
- Understanding of neurochemical shifts in early abstinence
- Language to reduce shame and increase engagement through psychoeducation
- Practical implications for treatment planning across levels of care

This course integrates neuroscience with evidence-based clinical interventions, reinforcing why structured care, medication-assisted treatment, skill development and environmental stabilization are critical for sustainable recovery.