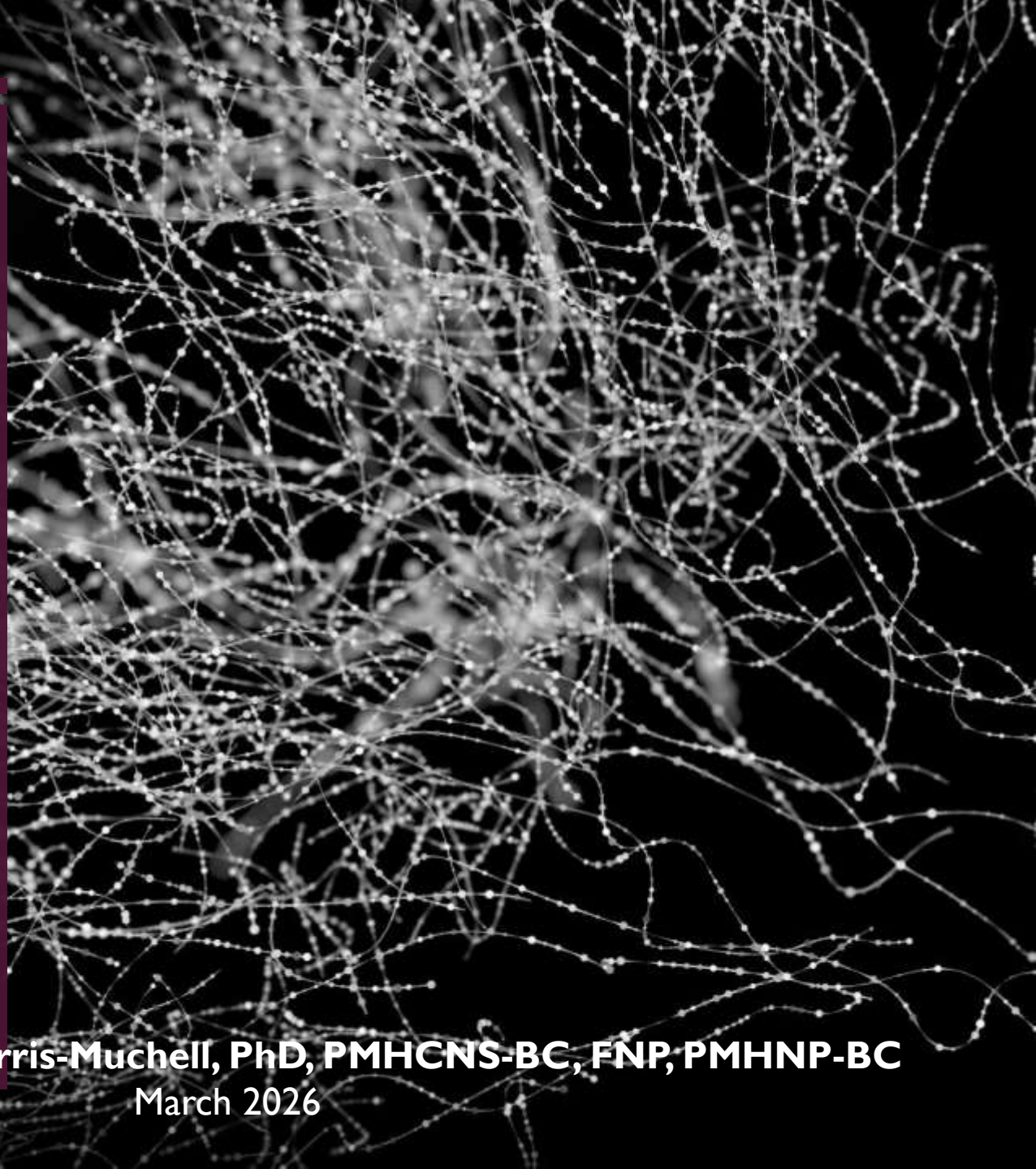
NEUROTRANSMITTERS IMPLICATED IN PSYCHIATRIC DISORDERS

OVERVIEW OF KEY NEUROTRANSMITTER SYSTEMS



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March 2026

INTRODUCTION

- Why neurotransmitters matter
- Chemical messengers regulating brain function
- Imbalances contribute to psychiatric symptoms
- Targets for many psychotropic medications

SEROTONIN OVERVIEW

MOOD, SLEEP, APPETITE, EMOTIONAL PROCESSING

SYNTHESIZED IN RAPHE NUCLEI

MAJOR PATHWAYS: MESENCEPHALIC, LIMBIC, CORTICAL

SEROTONIN IN DISORDERS

- Depression
- Anxiety disorders
- OCD
- PTSD
- SSRIs, SNRIs, TCAs

DOPAMINE OVERVIEW

- Reward, motivation, attention, motor control
- Pathways: mesolimbic, mesocortical, nigrostriatal, tuberoinfundibular

DOPAMINE IN DISORDERS

Schizophrenia
(hyperactive mesolimbic;
hypoactive mesocortical)

Depression (anhedonia)

ADHD

Bipolar disorder

NOREPINEPHRINE OVERVIEW

- Arousal, alertness, stress response
- Originates in locus coeruleus

NOREPINEPHRINE IN DISORDERS

- Depression
- Anxiety disorders
- PTSD
- SNRIs, TCAs, MAOIs

GABA OVERVIEW

PRIMARY INHIBITORY NEUROTRANSMITTER

REDUCES NEURONAL EXCITABILITY

GABA IN DISORDERS

Anxiety disorders

Mood disorders

Panic disorder

Benzodiazepines, GABA modulators

GLUTAMATE & ACETYLCHOLINE

Glutamate: excitation, schizophrenia, depression, bipolar disorder, NMDA modulation

Acetylcholine: attention, learning, memory, depression, schizophrenia

NEUROPEPTIDES & SUMMARY

Endorphins, substance P: stress, pain, reward

Linked to depression, addiction, trauma-related disorders

Summary of neurotransmitter dysregulation