

KATHLEEN (KAT) JOHNSON

Neuro-Innovation | Psychophysiology | Systems Architecture | Geospatial + Lineage Systems

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IDENTITY STATEMENT

Neuro-innovation architect and psychophysiology researcher developing the Autonomic–Interoceptive Predictive-Processing (AIPP) Model—a systems-level framework explaining multisystem regulation, identity formation, and adaptive patterning across human systems. I integrate wearable neuro-metrics, applied physiology, predictive-processing theory, and systems design to develop tools, models, and neuro-tech workflows that support human development, research, and enterprise innovation. My current trajectory expands AIPP into lineage-based identity mapping, intergenerational systems modeling, and environmental determinants of regulation, drawing from forensic investigative genetic genealogy and applied physiology to understand how humans adapt across time, lineage, and context.

RESEARCH INTERESTS

- Multisystem regulation + predictive-processing
- Interoceptive patterning + identity architecture
- Intergenerational pattern transmission + lineage systems
- Environmental determinants of regulation + adaptation
- Indigenous health systems + community-level resilience
- Spatial-behavioral pattern mapping + environmental psychology

CORE CAPABILITIES

Neuro-Tech + Wearable Metrics

EEG, HRV, fNIRS/ExG interpretation, biosignal-based insight, and mobile neuro-wellness lab development.

Systems Architecture

Cross-domain pattern mapping, identity architecture, and multisystem modeling for human systems.

Predictive-Processing + AIPP Modeling

Regulatory pattern analysis, interoceptive interpretation, adaptive behavior mapping, and multisystem ontology design.

Performance + Human Adaptation

Regulation-capacity development, cognitive-load understanding, and readiness-oriented physiology.

Enterprise Design + Innovation

Neuro-tech integration, applied psychophysiology frameworks, and ecosystem-level strategy.

Geospatial Intelligence + Spatial Patterning

Environmental + spatial pattern mapping, geospatial determinants of health, movement-based systems analysis, and spatial-behavioral modeling.

Lineage Science + Investigative Genealogy

Kinship reconstruction, intergenerational systems mapping, and lineage-based identity analysis.

RESEARCH + SCHOLARSHIP

Primary Research Focus

Multisystem regulation, interoceptive patterning, predictive-processing, and identity architecture across physiological, psychological, relational, and intergenerational domains. Emerging focus on geospatial determinants of regulation, lineage-based pattern transmission, and Indigenous health systems.

Signature Contribution | Autonomic-Interoceptive Predictive-Processing (AIPP) Model

A unified regulatory ontology describing how humans form patterns, adapt, and regulate across systems; structurally isomorphic with neural regulatory architecture

U.S. Copyright Registration: 1-15140098622

Manuscript Under Review

Johnson, K. (2026). *Substance use disorder as a multisystem dysregulation pattern: An AIPP-based psychophysiological model*. Under review at *Addiction Research + Theory*.

Working Papers

- AIPP-Based Analysis of Anxiety + Panic
- Persistent Somatic Symptoms Through the AIPP Lens
- ENS-Driven Predictive-Processing Patterns
- Spatial-Behavioral Determinants of Regulation (in development)
- Lineage-Based Identity Architecture (in development)

ENTERPRISE LEADERSHIP

Founder + Principal — KatScratch.online

A multi-division ecosystem integrating neuro-innovation, applied psychophysiology, geospatial intelligence, identity architecture, and systems-based human development.

Vital Insights — Science + Systems Division

- HRV, EEG, fNIRS/ExG interpretation
- Biosignal analysis + autonomic profiling
- Lineage science + investigative genealogy
- Systems-based pattern mapping
- Environmental + spatial pattern mapping for multisystem insight
- Geospatial-behavioral analysis

Inner Edge — Performance + Identity Division

- Identity architecture + mission clarity
- Regulation-capacity development
- Nervous-system literacy
- Mobile neuro-wellness lab integration

PSYCH-ish — Media + Education Division

- Narrative-driven science communication
- Applied psychophysiology education
- Identity + resilience content
- Writing + podcast development

501c3 Leadership

- Spring Creek Ranch — Equine rescue + experiential systems
- Debra Louise Thompson Kucera Memorial Fund — Resilience access + community support

EDUCATION

B.S. Psychology (Summa Cum Laude)

University of Northwestern – St. Paul

Concentrations: Health Psychology; Marriage + Family Counseling

Graduate Certificate — Organizational Leadership

University of Northwestern – St. Paul

M.A. — Scientific Writing

Johns Hopkins University — In Progress

Graduate Certificate — Forensic Investigative Genetic Genealogy

University of New Haven — In Progress

Graduate Certificate — Biblical Counseling

Master's International University of Divinity — In Progress

ADDITIONAL TRAINING

cert | neuro-science + neuro imaging – Johns Hopkins University

Neural Signaling + fMRI | EEG basics + neuroimaging principles and applied neuroscience

cert | biosignal processing - MIT

Biomedical Signal + Image Processing

cert | mindfulness in integrative healthcare – University of Minnesota

Integrative Therapies + Healing Practices

cert | machine learning - Harvard

Data Science: Machine Learning

DOCTORAL TRAJECTORY

Ph.D. Psychology (Research Track) — Target Start: Fall 2027

Focus: Indigenous Health, geospatial pattern analysis, multisystem regulation, predictive-processing, intergenerational identity architecture, and environmental determinants of human adaptation grounded in autonomic interoceptive predictive (and experiential) processing and systems neuroscience.

STRATEGIC GOALS

- Advance the AIPP Model as a systems-level regulatory + identity architecture
- Extend multisystem regulation research into lineage + environmental determinants
- Build and operationalize the mobile neuro-wellness lab + neuro-tech workflows
- Publish science writing on what + why + how of neurotransmission + physiology