Instructor: J. Donald Dishman

Title: Neuromodulation: state of the art in non-invasive brain stimulation

Course Description: This presentation is a one-hour fifty-minute discussion of the clinical applications of neuromodulation techniques. Neuromodulation, the therapeutic application of electricity, photoenergy, magnetic or ultrasonic stimuli for clinical aims, is growing exponentially. Research and clinical applications of non-invasive brain stimulation (NIBS) are expanding at a high rate in the domain of applied clinical neurosciences. This presentation will discuss the latest advances in the areas of transcranial magnetic stimulation (TMS), transcranial direct current stimulation (tDCS), photobiomodulation (PBM) and ultrasonic neuromodulation (US). Currently, much research is underway in the utilization of NIBS to treat neurological conditions such as traumatic brain injury, post-stroke rehabilitation, neurodegenerative disease, acute and chronic pain, as well as post-traumatic stress disorder. A review of the foundations and development of NIBS techniques will be provided as well as a discussion of the putative physiology of actions and mechanisms. A review of the instrumentation and equipment and its functions will also be discussed. A review of the current scientific literature with respect the use of various forms of NIBS in various neurological conditions will also be addressed.

Learning objectives:

1. Understand the fundamentals of NIBS techniques and the basic physiological effects on the brain.
2. Appreciate the historical aspects of the development of NIBS and it's approved used for various neurological disorders.
3. Describe the literature and the evidence-base for utilization of repetitive TMS for refractory depression.
4. Understand and appreciate the evidence in the literature to support the non-FDA approved sues of NIBS in traumatic brain injury.
5. Describe how NIBS may help patients as part of a post-stroke rehabilitation program.
6. Appreciate the current research and current evidence of the use of NIBS in the post-traumatic stress disorder population.
7. Describe the basic design and use of a tDCS device.
8. Appreciate clinical applications of tDCS for depression.
9. Understand the use of tDCS in stroke rehabilitation strategies.
10. Understand the theory and clinical applications of transcranial US.
11. Describe PBM and its potential clinical applications.

Outline (15 min increments):

- History of NIBS
- Most Common types of NIBS: TMS, tDCS, PBM and US
- TMS overview
- tDCS overview
- PBM overview
- US overview
- Putative physiology of mechanisms
- Contraindications and potential risks of NIBS
- Review of literature support for depression, OCD, PTSD and pain
- Applications of NIBS for stroke rehab, cognitive decline and dementia

- Review of literature for the role of NIBS in traumatic brain injuries
- Overview of applications of TMS and tDCS in the management of traumatic brain injuries

- Use of TMS/tDCS in post-stroke rehabilitation
- Use of TMS/tDCS for tinnitus, acute and chronic pain

- The use of tDCS for depression
- Review of literature regarding tDCS for clinical depression
- tDCS and TMS combination and their use in depression

- tDCS in the management of PTSD,
- review of literature of PYSD and tDCS – is it effective?
- Review of literature for tDCS for insomnia
- tDCS applications for stroke rehabilitation

- The use of US brain stimulation in clinical conditions

- The use of PBM in various neurological conditons

Instructor: Easter, Michael

Title: What 33 Days in the Arctic Taught Me About Expanding Human Potential

Course Description:

Over millions of years, human evolution was shaped by the need to overcome real and often difficult challenges—whether it was hunting for food, securing resources for the tribe, or migrating with the seasons. Each challenge pushed our ancestors to grow, unlocking new levels of capability, confidence, resilience, and even deeper appreciation for life. These experiences didn't just reveal our potential—they expanded it. Today, however, many of us can live comfortably without ever facing such tests. We may have steady jobs, homes, and families, yet remain unaware of the untapped strength and possibility within us. Michael spent 33 days in the Arctic and traveled the world interviewing top researchers, elite athletes, business leaders, and doctors to explore this very idea: how challenge and discomfort help us reconnect with our full potential. His journey combined elements of rewilding and mental rewiring—mirroring what experts across disciplines say we all need more of in modern life. Through vivid storytelling and grounded research, Michael offers a practical, inspiring blueprint for embracing challenge, unlocking human potential, and rediscovering what it truly means to be alive.

Learning objectives:

1. Explain the evolutionary role of challenge in human development, including how overcoming adversity contributed to the growth of resilience, capability, and perspective.
2. Identify the consequences of modern comfort and routine, and how they can limit awareness and use of our full potential.
3. Describe the benefits of purposeful challenge and discomfort, using insights from Michael's Arctic expedition and global interviews to outline practical strategies for rewilding, mental rewiring, and personal growth.

Outline (15 min increments):

1. The Evolutionary Role of Challenge (0–15 min)3
Explore how our ancestors faced physical and mental challenges that shaped human growth, resilience, and capability. Understand how adversity played a key role in expanding our potential across generations.
By examining these survival-based challenges, we gain insight into why our brains and bodies are wired to grow through struggle.

2. Modern Comfort vs. Human Potential (15–30 min)
Examine how today's relatively easy lifestyles may limit personal growth and leave untapped strength within us. Discuss the risks of avoiding discomfort and how it can lead to stagnation.
This section highlights how convenience, while beneficial, can create a disconnect from the inner resources we rarely access.

3. Lessons from the Arctic and Beyond (30–45 min)
Learn about Michael's 33-day Arctic expedition and his conversations with world-class experts.

Discover how these experiences illustrate the value of challenge, rewilding, and mental rewiring. *Michael's journey serves as both a personal trial and a case study in how extreme conditions can awaken dormant capabilities.*

4. A Blueprint for Reconnection (45–60 min)
Translate insights into action with practical tools and mindset shifts for embracing discomfort, cultivating resilience, and unlocking deeper purpose and fulfillment in modern life.
Participants will walk away with actionable steps to integrate purposeful challenges into daily life for long-term growth and vitality.

Speaker Name: Heidi Haavik

Course Title: The Triple Brain Network

Course Description: Dr. Heidi Haavik, a chiropractor and Ph.D. trained neurophysiologist, is one of the most popular chiropractic speakers in the world today. She is the Vice President of Research at the New Zealand College of Chiropractic and is best known for her ground-breaking research on the impact of chiropractic adjustments of vertebral subluxations on the brain and central nervous system. What is becoming clear from scientific studies is that spinal dysfunction negatively impacts brain function. Dr. Haavik will explain the contemporary brain model of the vertebral subluxation (according to published research articles). She has a gift for explaining this complex neuroscience research in easy-to-understand language. She will explain the latest scientific understanding about how chiropractic high-velocity, low-amplitude (HVLA) adjustments can reverse maladaptive brain changes that occur over time when spinal dysfunction is present. The latest research is showing that a particular group of brain regions, together called the Default Mode Network change their conversations over four weeks, and these brain changes correlate with positive clinical outcomes such as reduced pain, improved mood (reduced anxiety and depression) and better quality of life! Dr. Haavik will explain how to implement this latest contemporary understanding of brain model into your practice. The complex neurophysiology will be presented in an easy to understand and clinically practical manner for students, CAs and DCs.

Learning Objectives:

LO1: Understand the triple brain network and its role in chronic pain and mental health disorders

LO2: Understand and explain the impact of chiropractic care on the Default Mode Network

Course Outline:

First 15 minutes

- The functional role of the spine
- How the brain controls normal healthy spinal function
- Basic science research study effects of spinal dysfunction on brain function (including the contemporary model of the vertebral subluxation)

Second 15 minutes

- Basic science research study effects of spinal adjustments on brain function (including the contemporary understanding of the neurophysiological effects of the chiropractic high-velocity, low-amplitude adjustment)
- What this evidence tells us about the known (and potential) mechanisms of chiropractic care

- The triple brain networks and their involvement in the development of chronic pain and mental health problems

Third 15 minutes

- The four-week UK randomized controlled trial methods
- The four-week UK randomized controlled trial results

Fourth 15 minutes

- How this latest basic science research can explain the clinical outcomes, and how to communicated this with your patients, the public and other health care providers
- Future directions

Cassie Holmes
Happier Hour- Clinical Definition and Benefits of Well-Being
1 Hour

Description:

Happiness, often defined as a state of well-being and contentment, brings numerous benefits such as enhanced workplace performance, stronger relationships, and better health. However, many people today suffer from "time poverty" a chronic feeling of having too little time, which is both widespread and detrimental to happiness. Studies show that having more discretionary time is linked to greater happiness, but only when it is spent intentionally. One solution is to invest time better by prioritizing meaningful activities, illustrated by the time jar analogy filling your time with what matters most first. Tracking how we spend time can reveal opportunities to focus on proven sources of happiness like social connection, rituals, exercise, nature, flow states, and purposeful work.

Learning Objectives:

1. **Define happiness and explain its benefits** in areas such as workplace performance, relationships, and health.
2. **Describe the concept of time poverty**, its prevalence, negative impacts, and the role of discretionary time in promoting happiness.
3. **Identify strategies for investing time more effectively**, including prioritization, time tracking, and engaging in activities that enhance happiness such as social connection, rituals, and meaningful work.

1) The Problem (Min 15)

a) Happiness – Clinical Definition and Benefits

- Define happiness using psychological constructs such as *subjective well-being*, which includes both affective (positive emotion) and cognitive (life satisfaction) components.
- Evidence from positive psychology suggests that higher levels of subjective well-being are associated with better health outcomes (e.g., lower cardiovascular risk, decreased inflammation), improved immune functioning, and greater longevity.
- Happiness also correlates with increased productivity, stronger interpersonal relationships, and better coping mechanisms in the face of stress.

b) Time Poverty – Definition, Prevalence, and Consequences

- Time poverty refers to the chronic feeling of having too many obligations and not enough time to meet them, leading to psychological strain.
- Studies indicate that over 50% of working adults report being time poor, especially in dual-income households and among caregivers.

- Clinical consequences include increased rates of burnout, anxiety, sleep disturbances, and reduced self-care behaviors (e.g., exercise, healthy eating), all of which contribute to a higher risk of chronic illness.

c) Relationship Between Discretionary Time and Happiness

- Research shows a U-shaped relationship: too little discretionary time leads to stress and reduced well-being, while too much can decrease perceived purpose and fulfillment.
- Clinical studies indicate that the optimal range of discretionary time (typically 2–5 hours per day) maximizes well-being when it is spent in meaningful and socially engaging ways.

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2) Solution I – Invest Better (Min 30)

a) Importance of Prioritization – Time Jar Analogy

- Use the time jar as a metaphor for life's limited temporal resources: fill the jar with "big rocks" (core values and priorities) before the "sand" (trivial tasks).
- Clinically, patients who engage in value-based time management report reduced cognitive load and increased satisfaction, aligning with principles of Acceptance and Commitment Therapy (ACT).

b) Time Tracking to Identify Worthwhile Activities

- Evidence-based tools (e.g., time-use diaries, behavioral activation logs) help individuals assess how their time is spent and identify activities that deplete vs. restore energy.
- Clinicians use this data in cognitive-behavioral interventions to support behavioral change, reduce avoidance, and increase engagement with rewarding experiences.

c) Sources of Happiness – Empirically Supported Interventions

- **Social connection**: A known buffer against stress, associated with decreased depression and improved immune function.
- **Ritual and routine**: Increases predictability and meaning, stabilizes mood—particularly in individuals with mood or anxiety disorders.
- **Exercise**: Clinically proven to reduce symptoms of depression and anxiety; stimulates endorphin and BDNF (brain-derived neurotrophic factor) release.
- **Time outdoors**: Exposure to natural light improves circadian rhythm, reduces cortisol levels, and enhances mood.
- **Flow**: A mental state of deep immersion linked to increased dopamine release and decreased self-referential thinking.

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3) Solution II – Be Invested (Min 15)

a) Hedonic Adaptation – Clinical Implications

- Humans tend to return to a baseline level of happiness despite positive or negative life changes; this can undermine sustained satisfaction from achievements or material gains.
- Clinically, this supports the use of intentional gratitude practices, savoring, and novelty-seeking to disrupt adaptation and maintain well-being.

b) "Count Times Left" – Temporal Scarcity as Motivator

- Highlighting the finite nature of life experiences (e.g., how many more times one might see a loved one or visit a favorite place) can activate present-moment awareness.
- This practice mirrors interventions from existential psychology and mindfulness-based therapies, increasing value-based behavior and life satisfaction.

Name:
James Nestor

Course Title:
You Are Breathing All Wrong — and How to Fix It

Duration: 1 hour

Short Course Description

Most of us never give our breath a second thought—until it's too late. But what if learning how to breathe better could transform your health, sharpen your mind, and even extend your life? In this powerful session based on his international bestseller *Breath: The New Science of a Lost Art*, award-winning science journalist James Nestor explores how most of us are breathing incorrectly and the scientifically-backed techniques that can fix it. With insights drawn from ancient wisdom and cutting-edge research, Nestor reveals how small changes in the way we inhale and exhale can dramatically reduce anxiety, enhance focus, improve sleep, and reverse a wide range of chronic health problems.

Long Course Description

Breathing is the most essential act of life—and yet, almost all of us are doing it wrong. In this revelatory session, James Nestor, author of the international bestseller *Breath: The New Science of a Lost Art*, guides us through the science and history of breathing to uncover how modern habits, technology, and diet have physically altered our airways, diminished our health, and left us gasping for solutions.

Drawing on thousands of years of ancient breathing practices and the latest findings from pulmonologists, orthodontists, freedivers, and neuroscientists, Nestor will demonstrate how dysfunctional breathing contributes to common issues like anxiety, asthma, fatigue, snoring, ADHD, and even facial structure. Through a blend of storytelling, cutting-edge data, and practical tools, participants will discover how to optimize their breathing mechanics, rebalance their nervous systems, and restore respiratory health.

Whether you're struggling with focus, stress, poor sleep, or simply want to feel better, this session will equip you with actionable breathing techniques that can immediately improve your physical and mental well-being. You'll leave with a deeper understanding of your breath—and a simple, powerful way to change your life, one breath at a time.

Learning Objectives

- Diagnose dysfunctional breathing by recognizing key signs of poor respiratory habits and posture.
- Establish biomechanically-correct breathing patterns rooted in nasal breathing, diaphragmatic movement, and posture.
- Learn and apply the most effective slow breathing technique to reduce symptoms of anxiety and asthma, improve attention, and promote calm.

- Understand how the pathway through which we breathe—nose or mouth—affects overall health, from immunity to sleep quality to cardiovascular function.
- Recognize the impact of chewing and diet on craniofacial development, and how early-life habits shape lifelong breathing capacity and airway health.

Course Outline

1. I. The Problem (Min 0–15)

    - Why humans are the worst breathers in the animal kingdom
    - The science of dysfunctional breathing: mouthbreathing, snoring, sleep apnea
    - A brief history of how modern life—soft food, sedentary habits, and stress—damaged our ability to breathe

2. II. The Science of Correct Breathing (Min 16–35)

    - Understanding respiratory biomechanics: nose vs. mouth, diaphragm vs. chest
    - How slow breathing regulates the nervous system, lowers blood pressure, and enhances focus
    - Interactive breathwork demonstration: a simple, powerful slow breathing technique proven to reduce anxiety and boost performance

3. III. The Breathing Body (Min 36–50)

    - How chewing and facial development in early life shape airways
    - Case studies from ancient skulls to modern orthodontics
    - How to assess and improve airway structure through breath and lifestyle changes

4. IV. A Breath Reset (Min 51–60)

    - Tools and techniques to retrain your breath, restore balance, and reclaim health
    - How to build a daily breathing practice
    - Closing breathwork exercise for clarity and calm

Outline
The Use of Neuro-Vision Rehabilitation in the Treatment of Visual Snow-What the Research Tells Us

1. What is Visual Snow Syndrome? (VSS)
2. Symptoms of VSS
    1. Visual Symptoms
    2. Non-Visual Symptoms
3. VSS Cause
4. How we got started?
    1. College Baseball Player
        1. Conference article
        2. Television
        3. ESPNU
        4. Sports Illustrated
    2. Visual Snow Initiative
        1. Put Dr. Tsang and I together
            1. We decided this is a subject that needed further study
    3. The NORT Study
        1. What to Measure
        2. National Eye Institute - VFQ-25
            1. What does is measure
            2. Why choose this survey?
        3. The Study- Published in Frontiers of Neurology, December 2022
            1. Study Design
            2. Objectives
            3. Treatment design
            4. Study Size
            5. Co-morbidities

6. Hypothesis Statements
7. Paired T-Test
8. The Outcome of the Study
    1. Composite score
    2. General Health
    3. General Vision
    4. Ocular Pain
    5. Near activities
    6. Distance activities
    7. Social Functioning
    8. Mental health
    9. Role limitation
    10. Dependency
    11. Color Vision
    12. Peripheral Vision
    13. Effect size
9. Case Studies
10. Where are we going from here?

Course Title

From Vivitrol to Innate: A Neurologist's Medical Breakthrough that Could Redefine Chiropractic Forever

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Course Description (400 characters):

Addiction has now been proven to be a neurological brain disease. Dr. Surasky, double board-certified neurologist and addiction specialist, pioneered breakthrough medication protocols now used in centers nationwide. In a unique partnership with NYCC, he discovered that a precisely delivered chiropractic adjustment can restore systemic coherence and unlock integrated healing throughout the brain and body.

Learning Objectives (Bulleted List):

• Deepen understanding of addiction as a neurological condition rather than a moral or psychological failing, fostering greater empathy and clinical awareness.
• Describe how addictive substances hijack limbic-cortical circuits, driving unrelenting compulsions to seek and use drugs despite ongoing destruction to a person's life.
• Learn the critical differences between medication-assisted treatments, including Suboxone, Sublocade, and Vivitrol—highlighting protocols that help significantly improve prognosis.
• Identify six neurological conditions that optimize the nervous system's ability to integrate a chiropractic adjustment, resulting in better health outcomes.

Patient Outcomes (Bulleted List):

• Clinicians will be better able to identify and diagnose when a patient is showing signs of addiction and expedite appropriate treatment.
• Patients will benefit from providers who understand addiction as a neurological disease, leading to more accurate diagnoses and reduced stigma in care.
• Patients will gain access to more effective, brain-healing treatments as clinicians learn to differentiate between Suboxone, Sublocade, and Vivitrol.
• Patients undergoing chiropractic care will experience improved health outcomes as clinicians apply critical neurological principles that optimize the brain-body response and amplify the impact of each adjustment.

Course Outline (Organized in 15-Minute Increments):

0–15 Minutes: The Neurological Basis of Addiction

• Review of diagnostic criteria for substance use disorders, including clinical indicators and behavioral patterns as defined by DSM-5.
• Comparison of older models of addiction with the modern understanding of addiction as a chronic, relapsing brain disease.
• How drugs of abuse hijack the limbic system and drive unrelenting, compulsive cravings—often leading to recurring relapses and death.

15–30 Minutes: Integrating Chiropractic into Addiction Recovery

• Understanding the key differences between forms of medication-assisted treatment for opioid and alcohol use disorders, including Suboxone, Sublocade, and Vivitrol.
• Introduction to new protocols utilizing these medications that dramatically improve patient survival and sustained sobriety.
• Identifying the right time to incorporate counseling and behavioral interventions for optimal long-term outcomes.

30–45 Minutes: Chiropractic Integration and Clinical Outcomes

• Dr. Surasky's collaboration with New York Chiropractic College to introduce chiropractic care into multidisciplinary addiction treatment programs.
• Review of chiropractic protocols applied and the neurological rationale for their use in addiction recovery.
• Outcomes observed following chiropractic integration—including widespread, measurable improvements in mood, sleep, retention, and autonomic regulation—illustrated through clinical cases from Dr. Surasky's treatment centers.

45–60 Minutes: The Signal That Rewires – Neurological Conditions That Maximize Adjustment Impact

• Key observations Dr. Surasky made while overseeing chiropractic care in addiction treatment facilities, including the striking disparity in outcomes—some patients experienced dramatic, system-wide improvements, while others showed minimal change.
• Clinical conclusions drawn from these observations, identifying the neurological conditions that determine a patient's ability to receive and integrate the adjustment.
•Understanding the adjustment as a signal-based intervention—delivering information to the nervous system capable of initiating system-wide change.
• Emphasizing chiropractic's unique capacity and mission to serve a suffering humanity.

Other Notes:

• Dr. Russell Surasky is a board certified by both the American Board of Psychiatry and Neurology) and board certified by the American Board of Preventative Medicine – Addiction Medicine).

• He currently practices full time as a clinical neurologist at Northwell Health in New York and serves as an Professor of Neurology at the Zucker School of Medicine at Hofstra/Northwell.

Instructor: Matthew Walker

Course Title: Why We Sleep

Course Description:

This course offers an in-depth exploration of the neuroscience of sleep through the lens of Matthew Walker's groundbreaking book Why We Sleep. Students will examine the essential functions of sleep, including its impact on brain health, cognitive performance, memory consolidation, emotional regulation, and physical well-being. The course will cover key sleep mechanisms such as REM and NREM cycles, circadian rhythms, and sleep pressure, while also discussing the consequences of sleep deprivation ranging from increased risk of Alzheimer's and cardiovascular disease to impaired learning and mood disorders. We will analyze how modern lifestyles and workplace culture contribute to poor sleep habits, and how systemic and personal changes can support healthier sleep. Through engaging discussions and practical strategies, students will learn to view sleep not as a luxury, but as a fundamental pillar of human health and performance.

Course Objectives:

1. **Understand the Neuroscience of Sleep:**
   Explain the biological processes and mechanisms of sleep, including REM and NREM cycles, circadian rhythms, and sleep pressure, and their role in supporting brain and body function.
2. **Analyze the Consequences of Sleep Deprivation:**
   Evaluate the short- and long-term health impacts of insufficient sleep, including its connection to chronic illnesses such as Alzheimer's, cardiovascular disease, and mental health disorders.
3. **Apply Strategies for Improving Sleep Health:**
   Identify and implement evidence-based personal and societal strategies for enhancing sleep quality, while critically assessing the influence of modern work culture and lifestyle on sleep behavior.

Cours Outline:

1. **Understanding the Foundations of Sleep (0–15 min)**
   We begin by exploring the basic science of sleep, focusing on the roles of REM and NREM cycles, circadian rhythms, and sleep pressure. Students will learn how these systems regulate when and how we sleep, and why they are crucial for mental and physical restoration.
2. **The Benefits of Sleep Across the Lifespan (15–30 min)**
   This section highlights the wide-ranging benefits of sleep, from memory consolidation and emotional regulation to immune support and cardiovascular health. We'll discuss how sleep contributes to learning, creativity, and resilience—and how these benefits change across different stages of life.
3. **The Dangers of Sleep Deprivation (30–45 min)**
   We examine the consequences of chronic sleep loss, including its links to Alzheimer's disease, heart attack, stroke, obesity, and mental health disorders. Students will also discuss

how even mild, consistent sleep deprivation can impair decision-making, mood, and cognitive function.

4. **Improving Sleep in a Modern World (45–60 min)**
   The final segment focuses on solutions. Students will evaluate how lifestyle, technology, and work culture disrupt sleep—and explore practical strategies and systemic changes that can improve sleep health. Walker's evidence-based sleep tips will be reviewed and contextualized for everyday application.

Speaker Name: Tommy Wood

Course Title: Optimizing cognitive function

Course Description: Though we are often told that this is not the case, all the latest neuroscience suggests that we have a huge amount of control over how our brains function, including our memory, decision making, and ability to focus. Rethinking about how we use our brains to structure it more like the way that athletes train and develop their bodies for optimal performance, this talk will provide evidence-based strategies leveraging the principles of arousal and neuroplasticity to better understand how we can perform at our best each day.

Course Objectives:
- Discuss modifiable factors that influence cognitive function
- Assess the evidence that cognitive function can be enhanced, and the role of cognitive stimulus in cognitive enhancement
– Discover how to approach cognitive function over the long- and short-term to optimize performance at any time

Course Outline:

0-15 minutes
• What is cognitive function?
• What are the factors that determine cognitive function?

15-30 minutes
• How does neuroplasticity work in the adult brain?

30 to 45 minutes
• Stimulus as a primary driver of tissue function, including the brain
• Demand-driven adaptations to stimulus and their role in promoting cognitive function
• The interplay between stimulus and recovery to build cognitive reserve

45-60 minutes
• The 3-S model of brain function – a practical framework for behavior and lifestyle modification to enhance cognitive function
• Structuring your year/week/day to optimize cognitive performance like athletes optimize physical performance