ADVANCED CCE COURSE

- BS2.01 Introduction to the Neuroplasticity Model

o This class called the 'Introduction to the Neuroplasticity Model' covers the major changes in neuroscience over the past 20 years. It highlights the differences between basic science and clinical science, and why both types of research are important. this class also reiterates what patient-focused, evidence-informed chiropractic care is and then focuses on Neuroplasticity, what it is and why the past 30 years of neuroplasticity research is so important for chiropractors to understand. This class ends by looking at what role neuroplasticity plays in evidence-informed chiropractic care, with a look at the Rubicon Model of the Subluxation, and the model used in research publications, and how to communicate this contemporary model of the subluxation and the neurophysiological mechanisms of the chiropractic adjustments.

- BS2.02 Two Models of the Vertebral Subluxation

o This class called the 'Neurophysiology of the Chiropractic Subluxation' covers the latest basic science research evidence that has been done over the past two decades that have looked at what a vertebral subluxation is. It also looks at what evidence we have for one of the old theories about the chiropractic subluxation (the squashed nerve theory). And it covers how the latest science can easily be communicated with the public. The new science is showing us that the subluxation is almost as DD Palmer originally described it, just with a subtle new twist.

- BS2.03 The Neurophysiology of the Subluxation

o This class covers what a chiropractic subluxation is according to the latest basic science research evidence. We will also explain the consequences of spinal injury and how this affects the brain and spinal function.

- BS2.04 Adjustments affect the Prefrontal Cortex

o This class will cover the science of how chiropractic adjustment has been shown to impact the processing of the prefrontal cortex in the brain. You will learn about how this research was conducted and what it means. Discover the important role of the prefrontal cortex in executive functions, pain processing, and movement control. The fact that science is showing that chiropractic adjustments impact processing in the prefrontal cortex has major implications for how we may be impacting our patient's health. This research literally is the Chiropractors Dream, because the prefrontal cortex is vital for one's intelligence, movement control, pain processing, mental health, immune system and inflammation (thus most chronic diseases)

- BS2.05 The Impact of Stress on the Brain and Health

o This class will cover the science about how stress and traumatic experiences negatively impacts our brain function and our health by causing most of the common chronic diseases of today. It specifically covers the science that is showing us that stress turns off the prefrontal cortex. This is really relevant to us chiropractors, since we know we can impact the processing of the prefrontal cortex when we adjust

subluxations. This is also really important since the prefrontal cortex is vital for one's intelligence, movement control, pain processing, mental health, immune system and inflammation (thus most chronic diseases)! The prefrontal cortex makes you who you are, thus stress changes you in a major way. This class also covers how to recognise chronic stress in your practice members.

- BS2.06 Communicating Chiropractic's impact on the Brain

o This class will cover how to communicate the science about how stress and traumatic experiences negatively impacts our brain function and our health and likely contributes to most of the common chronic diseases of today. It will also cover how to communicate the science about how chiropractic adjustments most likely reverses this. Based on the current science, this course covers how you can most appropriately talk about the effects of chiropractic adjustments on the processing in the prefrontal cortex, and its potential impact on our patient's health. Learn what you can say and what you cannot say - based on the current scientific literature.

- BS2.07 Pain is created in the Brain

o This class covers the latest scientific understanding about pain, and how the feeling of pain is always created in the brain, due to either tissue damage, or even just the potential for tissue damage. The latest science tells us that pain is created in the brain – to warn us about danger. However, this system can go wrong due to maladaptive neural plasticity and is the reason for the development of chronic pain. Dr Haavik will cover how the feeling of pain can change and adapt over time depending on the person's experiences. We now know that for a lot of chronic pain there may no longer be much tissue damage present at all – it can become a learnt problem within the brain itself. It is a very real problem, but the cause of the problem is likely to involve the brain itself to a larger degree than previously realised.

- BS2.08 Understanding Chronic Pain

o This class will cover how best to communicate the latest contemporary understanding about what chronic pain is and how it develops. Dr. Haavik will clarify what we as chiropractors can and cannot claim to help you thrive in an evidence-informed world. As this class is about communicating the latest science Dr Heidi Haavik will also cover the key take-home messages from the clinical literature on chiropractic and pain, basically, how to communicate what we know from the research literature about the benefits of chiropractic care for back pain, neck pain and headaches.

- BS2.09 Connection between Stress, Pain, Sleep and Mental Health

o This class will cover how physiological and psychological stress plays a major role in maladaptive neural processes involved in the development of chronic pain. It will also discuss the relationships between chronic pain, mental health and sleep problems. this class also covers the research showing how physical trauma influences the development of subluxations and the consequences on brain function, i.e. the role of altered proprioceptive signaling in driving the neural plastic changes associated with chronic spinal pain problems. Finally, this class covers how best to talk about symptoms with your practice members. This involves explaining the latest understanding about how symptoms do not just develop out of thin air, but instead, the problem builds up undetected over time like a thousand straws on a camel's back, then appear 'suddenly' once your reach the thousandth straw.

- BS2.10 The Brain, Pain and the Neuroplastic Effects of Chiropractic Care

o This class will cover the latest scientific understanding of the function of the spine and how the brain controls movement (known as motor control in the literature). This class will also cover why gut health is important in the latest understanding of chronic pain. There are now strong links between the gut, the microbiome, stress, inflammation, and pain. This class will also cover the importance of healthy spinal movement for proper brain function. The way the brain controls spinal movement can be altered by spinal injury, and this can continue to change over time. Such changes to spinal movement patterns are known to play a vital role in how spinal pain becomes a chronic problem. This is why chiropractic care can be so important. This class will focus on the mechanisms of an adjustment, based on the latest relevant scientific research studies, how this is likely altering the way a person's brain is 'feeling' pain, and how the brain controls spinal movement patterns. The new basic science research tells a story that is similar to the old historic theories about the subluxation and mechanisms of chiropractic care, but with a subtle – and very important – twist to it. We used to think we were 'fixing' problems locally in the spine, when it now turns out we are more likely to be 'fixing' problems in the brain, and turning down or switching off the sensation of pain in the brain itself, in addition to improving the way the brain controls spinal movement patterns (improving spinal function).

- BS2.11 The Somatosensory Neuroplastic effects of Chiropractic Care

o This class covers the known sensory neuroplastic effects of chiropractic care and reviews the literature relevant to joint cavitation. It covers a neurophysiology technique called Somatosensory evoked potentials and what evidence Dr Heidi Haavik and her team have discovered over the past two decades using this technique. It also explores the research that has shown brain improvements in proprioceptive processing in the elbow and ankle after spinal adjustments and several studies that looked at whether adjustments can improve somatosensory filtering of proprioceptive information. This class also looks at the source localization study conducted in Denmark that discovered that adjusting subluxations alters processing in the prefrontal cortex, and how best to communicate this information with your practice members. Finally it discusses the literature on Joint cavitation and covers how best to answer the common questions about what makes this sound and whether is harmful or not.

- BS2.12 The Motor Control effects of Chiropractic Care

o This class covers the known motor control neuroplastic effects of chiropractic care. It reviews studies that use neurophysiological techniques to investigate how chiropractic care affects the central nervous system and how this may impact strength and fatigue.