



## LOCALIZING ION-CHANNEL ACTIVATION USING NULLIFYING WAVEFORMS

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### The Invention

UW Madison researchers have developed a system and method for counteracting the off-target effects of neuromodulation therapy by adding a second specially synchronized “nullification” waveform. This can be applied using an isolated current source using separate electrodes from those used for therapy. The additional waveform on its own does not activate/inhibit natural neural activity but can ‘nullify’ off-target activation that critically limits vagus nerve stimulation therapies if appropriately selected, timed and tuned. This has the potential to for use in all neuromodulation therapies (deep brain stimulation, spinal cord stimulation, hypoglossal nerve stimulation for sleep apnea) as they are all critically limited by off-target activation.

### Additional Information

#### For More Information About the Inventors

- [Kip Ludwig](#)

#### Tech Fields

- [Medical Devices : Neurological devices](#)

For current licensing status, please contact Jeanine Burmania at [jeanine@warf.org](mailto:jeanine@warf.org) or 608-960-9846