

Neuronal ion channels and their sensitivity to extremely low frequency weak electric field effects:

artificiellproduktion.wordpress.com/2018/11/06/neuronal-ion-channels-and-their-sensitivity-to-extremely-low-frequency-weak-electric-field-effects
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Extremely low frequency (ELF) is the ITU designation for electromagnetic radiation (radio waves) with frequencies from 3 to 30 Hz, and corresponding wavelengths of 100,000 to 10,000 kilometers, respectively.

In atmospheric science, an alternative definition is usually given, from 3 Hz to 3 kHz.

In the related magnetosphere science, the lower frequency electromagnetic oscillations (pulsations occurring below ~3 Hz) are considered to lie in the ULF range, which is thus also defined differently from the ITU radio bands.

https://en.m.wikipedia.org/wiki/Extremely_low_frequency

Neuronal ion channels are gated pores whose opening and closing is usually regulated by factors such as voltage or ligands. They are often selectively permeable to ions such as sodium, potassium or calcium. Rapid signalling in neurons requires fast voltage sensitive mechanisms for closing and opening the pore. Anything that interferes with the membrane voltage can alter channel gating and comparatively small changes in the gating properties of a channel can have profound effects. Extremely low frequency electrical or magnetic fields are thought to produce, at most, microvolt changes in neuronal membrane potential. At first sight, such changes in membrane potential seem orders of magnitude too small to

significantly influence neuronal signalling. However, in the central nervous system, a number of mechanisms exist which amplify signals. This may allow such small changes in membrane potential to induce significant physiological effects.

<https://www.ncbi.nlm.nih.gov/pubmed/14690272/>

https://en.m.wikipedia.org/wiki/Transcranial_pulsed_ultrasound

https://en.wikipedia.org/wiki/Extremely_high_frequency

<https://drive.google.com/file/d/19smegqmCUymJijzBzNgVUPnoMtvYCzQG/view>

Recently, optical stimulation has begun to unravel the neuronal processing that controls certain animal behaviours. However, optical approaches are limited by the inability of visible light to penetrate deep into tissues. Here, we show an approach based on radio-frequency magnetic-field heating of nanoparticles to remotely activate temperature-sensitive cation channels in cells.

<https://patents.google.com/patent/US20070215946>

Superparamagnetic ferrite nanoparticles were targeted to specific proteins on the plasma membrane of cells expressing TRPV1, and heated by a radio-frequency magnetic field. Using fluorophores as molecular thermometers, we show that the induced temperature increase is highly localized. Thermal activation of the channels triggers action potentials in cultured neurons without observable toxic effects. This approach can be adapted to stimulate other cell types and, moreover, may be used to remotely manipulate other cellular machinery for novel therapeutics.

<https://www.ncbi.nlm.nih.gov/m/pubmed/20581833/>

The US and Russia are the only nations known to have constructed weaponized ELF communication facilities.

What is it like to be the victim of a “health attack” ?

Alone in her bed in a sprawling Chinese metropolis, Catherine Werner was jolted awake one night by a pulsing, humming sound. It seemed to be coming from a specific direction.

<https://www.nbcnews.com/news/investigations/evacuated-after-health-attacks-cuba-china-diplomats-face-new-ordeals-n920241>

Some diplomats and their doctors tell NBC they’re concerned the U.S. wants to downplay what happened. Some suspect harassment has continued inside the U.S.

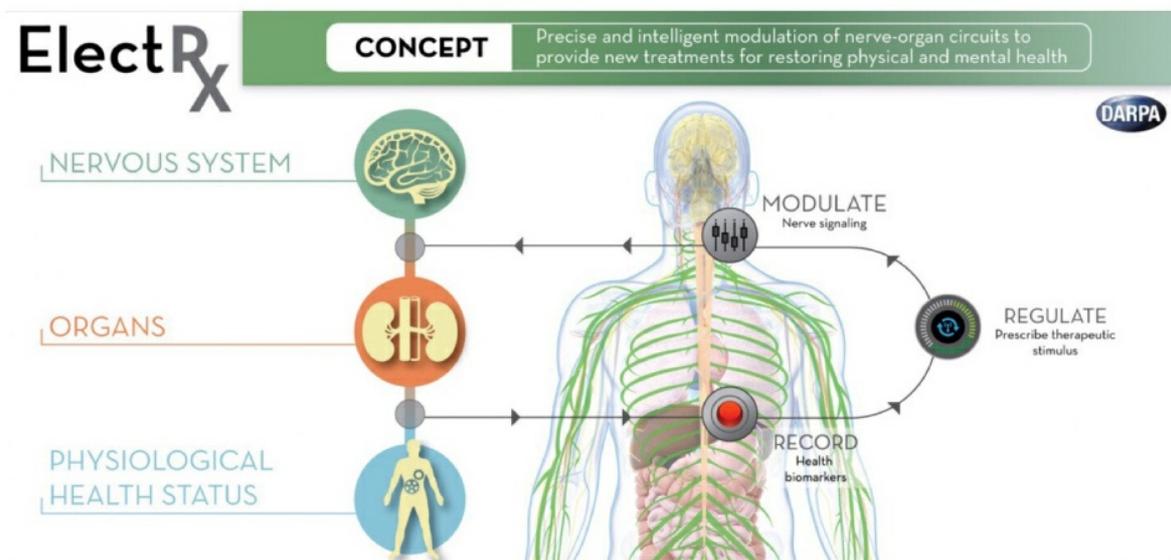


Modern neuromodulatory techniques for military applications have been explored for the past decade, with an intent to optimize operator performance and, ultimately, to improve overall military effectiveness. In light of potential military applications, some researchers have voiced concern about national security agency involvement in this area of research, and possible exploitation of research findings to support military objectives. The aim of this article is to examine the U.S. Department of Defense's interest in and application of neuromodulation and present a hypothetical explanation of where the missing dollars from Pentagon went?

<https://www.collective-evolution.com/2017/12/14/after-trillions-of-dollars-go-missing-unaccounted-for-the-dod-is-getting-audited-for-the-first-time-ever/>

The Pentagon's Push to Program all Human Brains:

<https://www.theatlantic.com/magazine/archive/2018/11/the-pentagon-wants-to-weaponize-the-brain-what-could-go-wrong/570841/>



The second quantum revolution started in the early 21st century. Now scientists can manipulate and sense individual particles, measuring and exploiting their properties. This has brought a significant development of quantum technologies and major technical advances in many different areas, including computing, sensors, simulations, cryptography and telecommunications.

<https://www.inverse.com/article/27872-darpa-merge-human-computer-neural-interfaces>

At the Defense Advanced Research Projects Agency, we are developing brain-computer interfaces—devices that sit directly in or on the brain and record cell activity, allowing us to see how neural signals translate into actions like movement and speech.

<https://www.wsj.com/articles/the-key-to-smarter-ai-copy-the-brain-1523369923>

It's now possible for drones to communicate telepathically with humans.

<https://www.defenseone.com/technology/2018/09/its-now-possible-telepathically-communicate-drone-swarm/151068/>

Dr. Justin Sanchez was named Director of BTO in May 2016, after serving as Acting Deputy Director of BTO since December 2015. The mission of BTO is to develop breakthrough technologies and capabilities for national security. He oversees 10 program managers working in areas of science and technology development including neurotechnology, gene editing, synthetic biology, and outpacing infectious diseases.

He joined DARPA as a Program Manager in 2013 to explore neurotechnology, brain science and systems neurobiology. Dr. Sanchez's research portfolio at DARPA includes innovative visualization and decoding of brain activity, new neuroprosthetic devices to help patients with memory deficits or neuropsychiatric illness, and advanced upper-limb prosthetic arm systems to restore movement and sensation that result from injury.

Before coming to DARPA, Dr. Sanchez was an Associate Professor of Biomedical Engineering and Neuroscience at the University of Miami, and a faculty member of the Miami Project to Cure Paralysis. He directed the Neuroprosthetics Research Group, where he oversaw development of neural-interface medical treatments and neurotechnology for treating paralysis and stroke, and for deep brain stimulation for movement disorders, Tourette's syndrome and Obsessive-Compulsive Disorder.

Dr. Sanchez holds Doctor of Philosophy and Master of Engineering degrees in Biomedical Engineering, and a Bachelor of Science degree in Engineering Science, all from the University of Florida.

<https://dtdnnp-01.darpa.mil/staff/dr-justin-sanchez>

It hasn't escaped DARPA's attention that no-surgery-required brain gear that gives people superpowers may find applications beyond the military.

<https://spectrum.ieee.org/the-human-os/biomedical/bionics/darpa-wants-brain-interfaces-for-able-bodied-warfighters>

"More and more people have access to biotechnology. It is very democratized right," he told me. "People need to think deeply. If you do have access to it, that doesn't mean you should use it."

<https://www.google.se/amp/s/gizmodo.com/darpa-exec-warns-biohackers-to-think-deeply-about-injec-1822735256/amp>

Elon Musk says he will soon announce a Neuralink product that can make anyone superhuman by connecting their brains to a computer.

<https://www.cnn.com/2018/09/07/elon-musk-discusses-neurolink-on-joe-rogan-podcast.html>

<https://www.businessinsider.com/facebook-building-8-prototype-device-lets-you-hear-through-skin-study-2018-10>

<https://techcrunch.com/2018/11/01/thomas-reardon-and-ctrl-labs-are-building-an-api-for-the-brain/>

Here's what the world will be like in 2045, according to DARPA's top scientists:

<https://www.businessinsider.com/darpa-world-predictions-2015-12?r=US&IR=T&IR=T>

The very concept of “disability” will disappear: thanks to new technologies and all people will be remotely controlled from Pentagon to fit their Agenda...

#NSA #CIA #DARPA #Raytheon #Pentagon #AI #AGI #RemotelyControlledBCI #Agenda21