Joshua A. Cain, PhD

VISIT *JOSHUACAIN.COM*

COGNITIVE NEUROSCIENTIST & CROSS-SECTOR LEADER IN NEUROTECHNOLOGY

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SOCIAL LINKS

LINKEDIN ---------- LinkedIn.com/in/neurojosh
INSTAGRAM ---------- @mrdrjosh
X (TWITTER) ---------- @mrdr_josh
BLUESKY ---------- @dr-josh
SUBSTACK ---------- @brokenmetronome

PROFESSIONAL LINKS

MY WEBSITE ---------- joshuacain.com
GOOGLE SCHOLAR ---------- tinyurl.com/jcgscholar
ORCID ---------- 0000-0001-5788-4693
GITHUB ---------- @josh-a-cain
UPWORK ---------- @neurojosh



ONLINE RESUME
joshuacain.com/resume

HIGHLIGHT REEL

PROFESSIONAL SUMMARY

BACKGROUND | Neuromodulation? | What is tFUS? | Consciousness? | Disorders of Consciousness (e.g., Coma)

Cognitive neuroscientist and research operations leader with cross-sector experience spanning: basic research, clinical trials, advanced data analytics, and the neurotechnology industry. Led 10+ research programs from inception through publication, including work in ***Nature***, ***PLOS ONE***, ***Brain Stimulation***, and ***Neurocritical Care***. Pioneered transcranial focused ultrasound (tFUS/LIFU) for human neuromodulation: led **1st-ever clinical trial** using tFUS (Treating Coma), conducted a significant portion of the earliest **basic research on tFUS in humans**, published **field-enabling, open-source software**, and established several tFUS labs across the globe while training many of the most prominent tFUS pioneers. Founded multiple early-stage neurotech companies and held multiple C-suite-level roles (CEO, CSO). Raised a collective $5M+ in grants and venture funding as the project's principle investigator (PI). Has > 5yrs of PI-level experience, with full ownership of the program lifecycle: strategy, protocol development, regulatory navigation (IRB, FDA, IP), execution, statistical analysis, and dissemination. My work has been featured widely in major media outlets worldwide, including: **Front Page of the *LA Times***, ***Voice of America***, **& *Wired***.

CORE SKILLS

MORE INFO

NEUROIMAGING (>10 YRS): (f)MRI [#1] | EEG | CT | fNIRS | Multi-Modal Imaging Expert | Imaging+Stimulation | Combining Imaging & Behavioral and/or Physiological Data | Structural MRI | ASL | Graph-theory analysis | FSL | SPM | FreeSurfer | ANTs | AFNI | EEGLAB | ERPLAB | Fieldtrip

NEUROMODULATION (~10 YRS): LIFU [#1] | TMS | Neuronavigation | NeuromodulationPioneer | Among 1st-users of Focused Ultrasound Stimulation in Humans | Led 1st Clinical Use of FUS | Biophysical acoustic simulation | tES | Closed-loop control

CLINICAL RESEARCH (>10 YRS): TBI & DOC (e.g., Coma) [#1] | Parkinson's | ADHD | Mood Disorders | Led Seminal Clinical Trials | RCT design | Protocol development | Clinical operations | GCP | IRB & FDA submission | CRO & vendor oversight | Multi-site management

DATA ANALYSIS (>10 YRS): MATLAB [#1] | Python | Bash | R | ML/AI | Bayesian Stats | GLM | Mixed models | Non-parametrics | Survival & longitudinal analysis | Propensity scores | SAP authoring | Psychometrics | Meta-analysis | Time-series analysis | Classification | Clustering | Dimensionality reduction | Feature engineering | Deep learning | NLP/LLMs (scikit-learn, PyTorch, TensorFlow) | SQL | SAS | SPSS | JASP | Excel | Tableau | Power BI | Spark/Hadoop | Git | Docker | Pandas | NumPy

CODE: MRI, EEG, TFUS

CROSS-SECTOR LEADERSHIP (>5 YRS): R&D Leader (20+ Programs, budgets >$10M) | Several Senior, Cross-Sector Roles: Academia, Non-Profits, For-Profits | Startup Founder | BCI Thought-Leader | Public Speaking | Business dev. | Contract negotiation (LOI, SRA, IAA, NDA) | Grant writing

HEALTHCARE DATA SCIENCE (>10 YRS): Health Outcomes Research | Biostatistics | Real-World Data / Evidence | Turning multi-modal clinical data into decisions for research, product, & regulatory audiences | EHR/EMR (HIPAA, CDISC) | Imaging biomarkers

EXPERIENCE

MORE INFO

Founder & CEO • Symphony Neurotech — EXECUTIVE SUMMARY — *San Francisco, CA* • OCT 2024 – PRESENT
Founded company | Defined mission & organizational structure | Raised $300K Round | Patented Critical IP | Led team of 4 employees, 7 advisors

Co-Founder & Chief Scientific Officer (CSO) • Empath Inc. — *San Francisco, CA* • JUL 2024 – OCT 2024
Co-founded company | Raised ~$500k | Led technical activities | Authored R&D, compliance, IP strategies & technical whitepapers | Filed IRB (GCP)

Chief Scientific Officer (CSO) • International Brain Research Foundation — *Miami, FL* • JAN 2024 – SEP 2024
Built focused ultrasound lab | Developed ultrasound stimulation protocol for treating Parkinson's | Secured Funding ($3.37M) | Managed multisite trials

Senior Research Scientist • Institute for Advanced Consciousness Studies — *Santa Monica, CA* • DEC 2021 – JAN 2024
– Built neuromodulation lab | Led team of 10+ through completion of landmark study deepening mediation via deep-brain neuromodulation
– For all neuromodulation research, led: design, funding, execution, analysis, publication, & dissemination

Staff Cognitive Neuroscientist • UCLA (*Lab of Martin M. Monti*) — *Los Angeles, CA* • DEC 2021 – JUL 2022
Directed clinical trials | Led data collection team | Developed protocols | Designed studies | Conducted advanced data analysis.
Led, published & publicized research on: neuromodulation, coma & consciousness | open-source ultrasound simulation software used field-wide

Contract Neuroscientist • University of Vienna (*Lab of Dr. Julia Crone*) — *Vienna, Austria* • MAY 2022 – SEP 2022
Built focused ultrasound laboratory | Trained research staff | Presented on Focused Ultrasound Methodology to Psychology Department

Member of the Board • Sputnik Brain Inc. — *New Delhi, India* • JAN 2020 – PRESENT
Provide ongoing strategic & technical guidance on Product design | Research direction | Scientific backing | Protocol design | Fundraising

Psychiatric Social Worker • Eyerly Ball Community Mental Health — *Des Moines, IA* • NOV 2016 – JUN 2017
Coordinated care for patients with severe psychiatric illness in several in-patient, group-home facilities | Led group therapy | Managed medications

EDUCATION

MORE INFO

PhD, Cognitive Neuroscience • UCLA — DISSERTATION — *Los Angeles, CA* • SEP 2017 – JAN 2022
Graduated 1st in class | Led 1st Clinical Trial using Ultrasound Neuromodulation | Advanced science of coma, consciousness, & brain stimulation

BSc, Neuroscience & Psychology • Drake University — *Des Moines, IA* • SEP 2012 – MAY 2016
4.0 GPA, *Summa Cum Laude* | Recognized as the 'Top Neuroscience Undergraduate' | Researched early-life stress in rodent models for ~4 yrs

MEDIA

Los Angeles Times (Front Cover!) | *Voice of America* | *Cody Rall* | *Wired* | *Vaisberg* | *Science* | *Scientific American* | *UCLA Press* | *Nautilus* & more!

PUBLICATIONS

MORE INFO | GOOGLE SCHOLAR | Citations: > 600 | * = Co-First Author

Cain, et al. Ultrasonic thalamic stimulation in chronic disorders of consciousness *Brain Stimulation*, 2021 — PDF GRAPHIC
Cain, et al. Real-time and delayed effects of subcortical low-intensity focused ultrasound *Nature (Scientific Reports)*, 2021 — PDF GRAPHIC
Cain, Luppi, Spindler, Górska, et al.* Mechanisms underlying disorders of consciousness *Neurocritical Care*, 2021 — PDF GRAPHIC
Cain, et al. S.M.A.R.T. F.U.S.: surrogate model of attenuation and refraction in transcranial focused ultrasound *PLOS ONE*, 2022 — PDF GRAPHIC
Cain, et al. Ultrasonic deep brain neuromodulation in acute disorders of consciousness a proof of concept *Brain Sciences*, 2022 — PDF GRAPHIC
Cain, et al. Facilitating meditation with focused ultrasound neuromodulation in experienced practitioners *PsyArXiv*, 2026 — PDF GRAPHIC
Cain & Hopkins, et al.* Transcranial ultrasound stimulation of central thalamus reduces arousal in healthy volunteers *2026* — PDF GRAPHIC
Cain, et al. Neuromotor recovery following ultrasonic thalamic stimulation in chronic disorders of consciousness *medRxiv*, 2025 — PDF GRAPHIC
Monti, ..., **Cain**, et al. Thalamic sonication in chronic disorders of consciousness a mechanistic single-arm clinical trial. *OSF Preprints*, 2026 — PDF GRAPHIC
Ganesan, **Cain** ..., King. ENIGMA-Meditation: worldwide consortium for neuroscientific investigations of meditation *Bio. Psychiatry:CNNI*, 2024 — PDF GRAPHIC
Iglehart, C., ... **Cain**, ... Saranathan, M. A systematic comparison of thalamus parcellation techniques *Brain Structure and Function*, 2020 — PDF GRAPHIC
Bratch, ..., **Cain**, et al. Working memory systems in the rat. *Current Biology*, 2016 — PDF GRAPHIC

GRANTS

Parkinson's Foundation (2024) – $3,365,000 | OSF Consciousness Science (2023–24) – $50,000 | UCLA Ursula Mandel (2020–21) – $20,000 | UCLA Graduate Research (2018, 20) – $20,000 each | UCLA Graduate Mentorship (2018, 19) – $6,000 each

AWARDS

Distinguished Clinical Research Award – Save a Soldier Project (2024) | *Gengerelli Distinguished Dissertation Award* – UCLA (2022) | *Best Post-Doctoral Paper* – UCLA (2022) | *Student Award* – Therapeutic Ultrasound Society (2019)

TALKS

U VIENNA | SBMT | Science of Consciousness (TSC) | Allen Institute | NANS | ISTU | FUN | School of Neurotherapy | Brain Stimulation Conference

DESIGN

MORE INFO

Photography | Videography | Drone Photography | Graphic design | Data visualization | Scientific figure design | 2D design & storytelling: Figma | Canva | Framer | Adobe (Photoshop, Illustrator, InDesign) | UI/UX & web/app design | Motion graphics | 3D design & modelling: Blender | Autodesk Fusion | SolidWorks | 3D Slicer | 3D CAD | 3D printing | Multi-modal AI media generation | Image compositing | Typography | Infographics | Presentation design

CERTIFICATION

GCP / CITI Human Subjects Research | ARRT / ARMRIT (radiology) | MRSO (MR Safety Officer) | ABRET (EEG) | HIPAA (Privacy & Security) | TMS Safety

MENTORSHIP

MORE INFO

Mentored 12+ research assistants > 6m, > 50% awarded or receiving MD/Doctoral Degrees | UCLA Teaching Assistant, 2017–2022 (~20 Hrs formal lecturing, grading/lesson-planning) | Tutored 24 high-school students (2020–2022), guiding projects to publication (Examples: [1] [2])