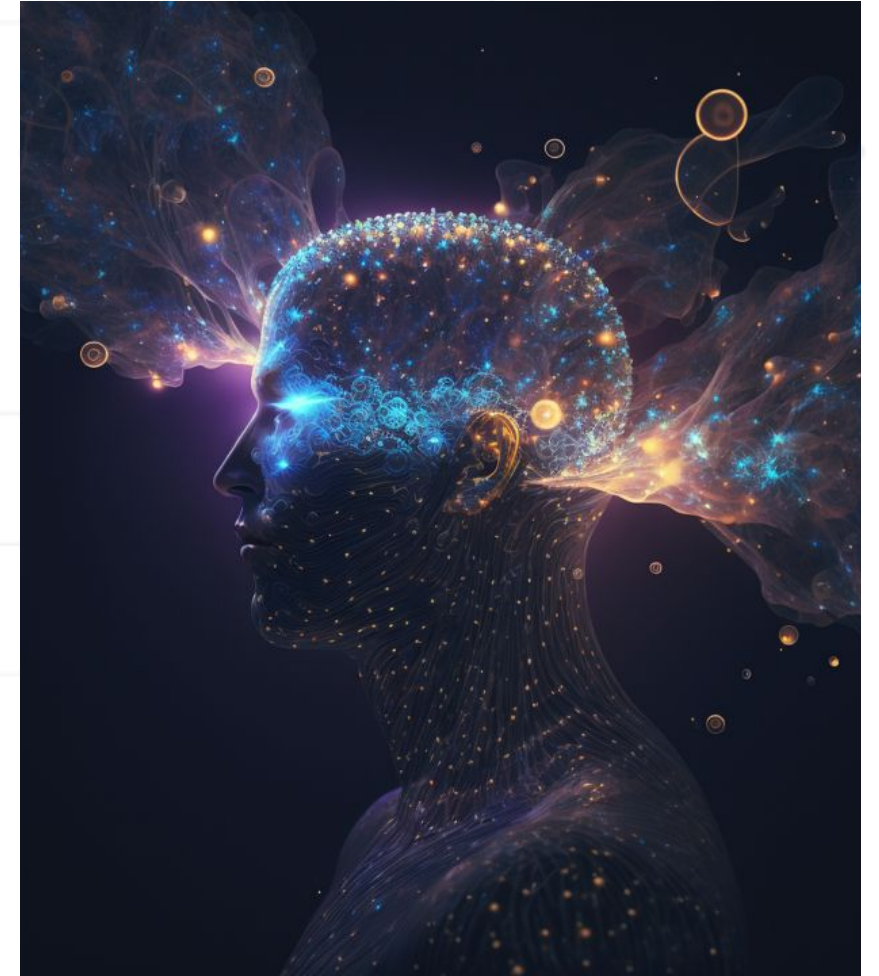


Brain Stimulation of the Pineal Gland to Advance Consciousness Science

Directly Testing Age-Old Ideas of the Pineal Gland through a State-of-the-Art UltraSound Neuromodulation Study

Introduction Deck for Potential Donors
Institute for Advanced Consciousness Studies



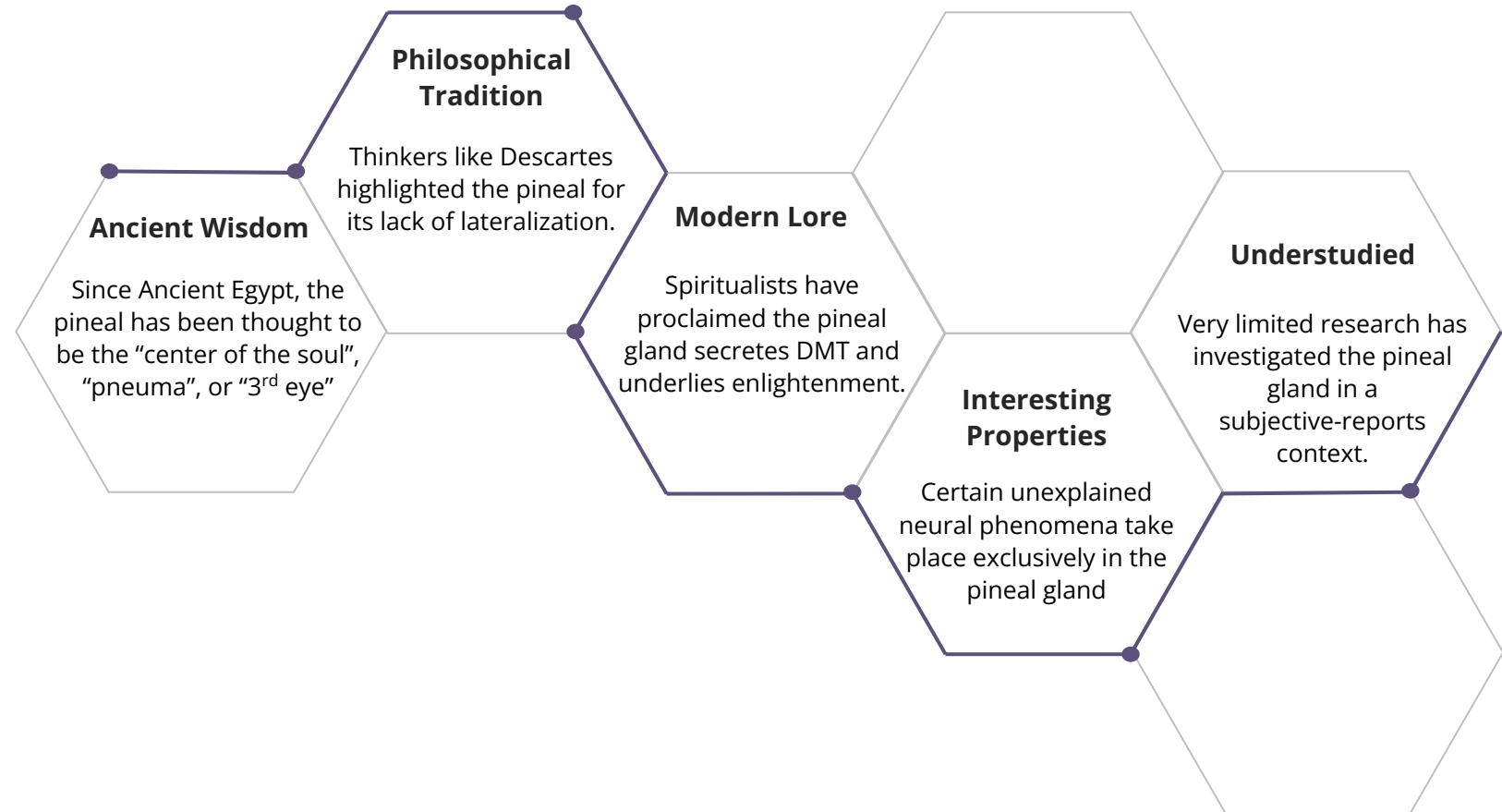


Why The Pineal Gland?

There has been a broad surge in “spiritual yearning,” alongside growing interest in practices such as meditation, breathwork, and kundalini yoga. Many of these communities confidently attribute transcendent experiences to the pineal gland, despite very limited scientific support for such claims.

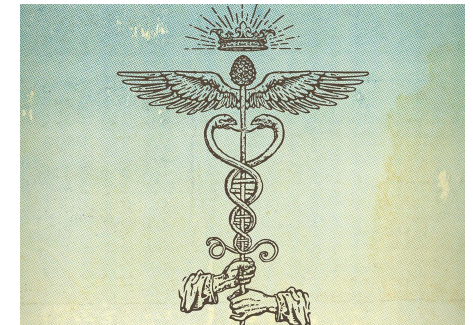
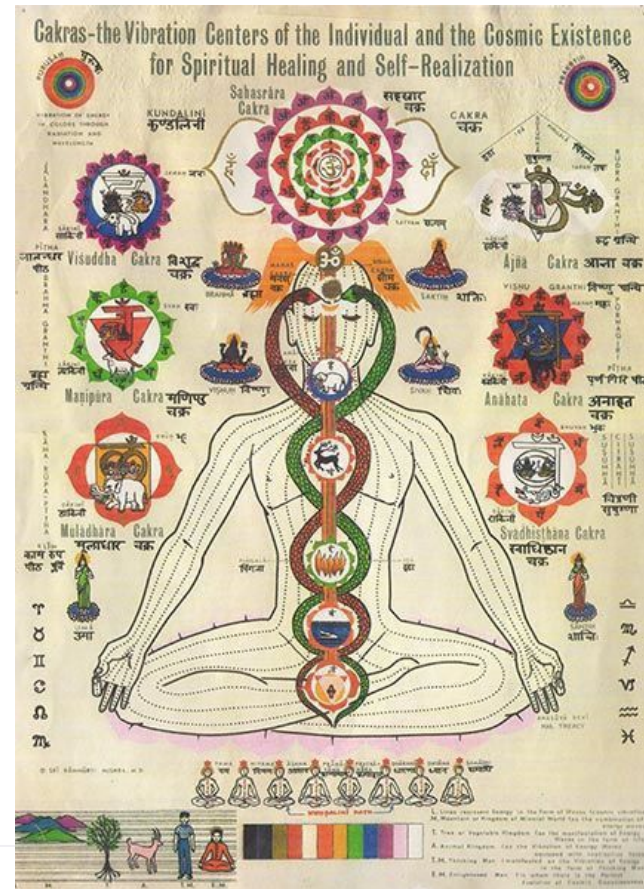
These ideas draw on both ancient and modern beliefs that the pineal gland plays a central role in dramatic shifts in consciousness.

Now for the first time, advances in technology and neuroscience make it possible to rigorously investigate whether, and how, the pineal gland contributes to conscious experience.

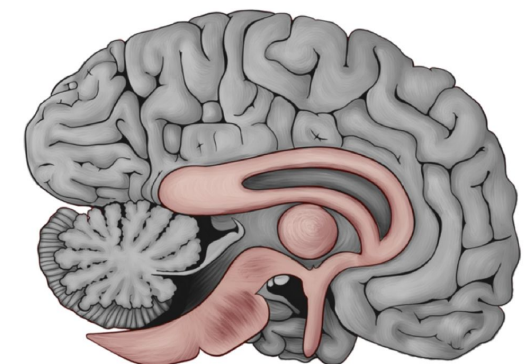


Ancient Wisdom

- Ancient cultures, including the Egyptian (Horus), Greek (Hermes), and Hindu (Shiva) civilizations refer to a “third eye” that, throughout time, has been said to see into higher realms of consciousness.
- In the Hindu-Yogic tradition, the pineal gland is associated with the Ajna chakra (third-eye) and an interface between the “spiritual” and physical realms. This has a clear parallel to Cartesian interpretations of the pineal gland as the connection between the soul and body.
- While ancient texts and drawings (e.g., Eye of Horus, pinecones) seem to suggest the centrally-located pineal gland as the anatomical structure of intended reference, this translation is **purely speculative**.



The Hermes Staff includes a pinecone at its apex



Eye of Horus overlaid on a sagittal slice of the brain

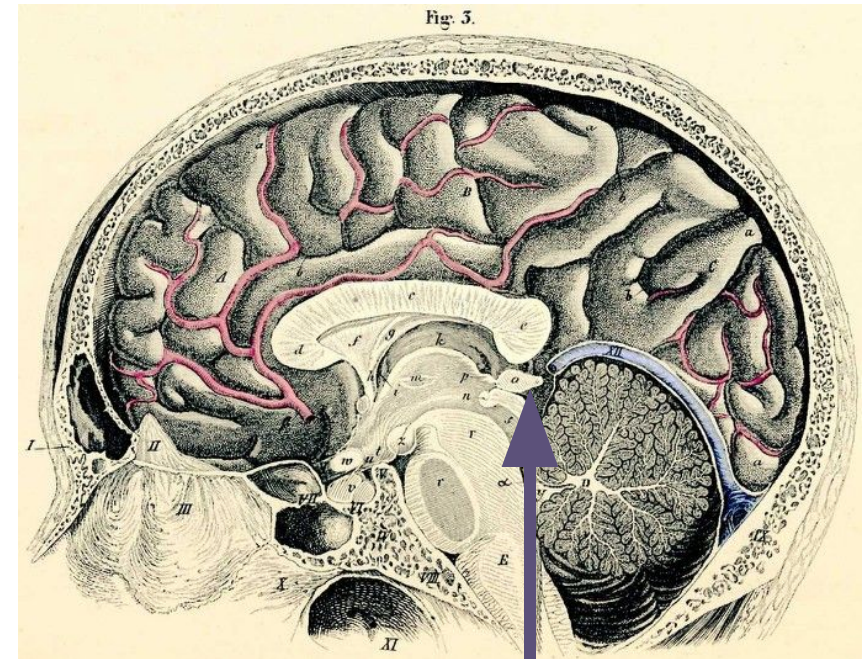
Philosophical Tradition

In his search for “the first instrument of the soul” or “sensus communis”, Rene Descartes pointed to the pineal gland as a likely seat of consciousness due to its physical properties that mirrored the experience of subjectivity:

- It is located in the center of the head
- It is not discretized (i.e. does not have lateralization like the rest of the brain)*.

The reason I believe this is that I cannot find any part of the brain, except this, which is not double. Since we see only one thing with two eyes, and hear only one voice with two ears, and in short have never more than one thought at a time, it must necessarily be the case that the impressions which enter by the two eyes or by the two ears, and so on, unite with each other in some part of the body before being considered by the soul.¹

- Rene Descartes



Pineal Gland

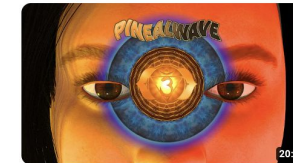
* Modern investigations have indeed shown the pineal gland has L and R subregions.

Modern Lore

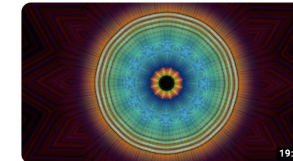
- A growing body of media promotes pay-gated practices, including yogic breathwork, guided meditation, and pure-tone listening, as methods to “activate” the pineal gland and induce transcendence or astral travel.
- Some have also suggested that DMT-related mystical experiences may be partly explained by pineal gland upregulation.
- At the more conspiratorial end, pineal gland calcification has been linked to claims about fluoride, public drinking water, and mind control.
- These claims are supported, if at all, by scant and unreliable evidence.



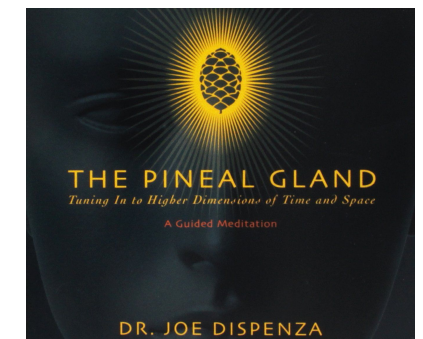
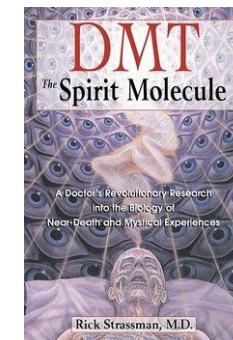
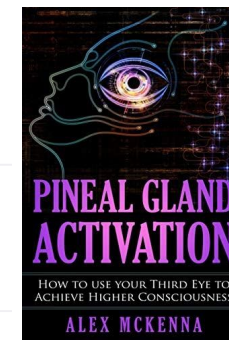
963Hz + 852Hz + 639Hz | Miracle Tones | Activate Pineal Gland | Open Third Eye | Heal Heart Chakra
17M views · 4 years ago
Meditative Mind



Instant Third Eye Stimulation - M1 (Warning: Very Powerful!)
12M views · 6 years ago
Transcending Vibrations
DIRECTIONS: Pineal stimulation occurs instantly with each meditation. Take steps to decalcify the pineal gland for best results.

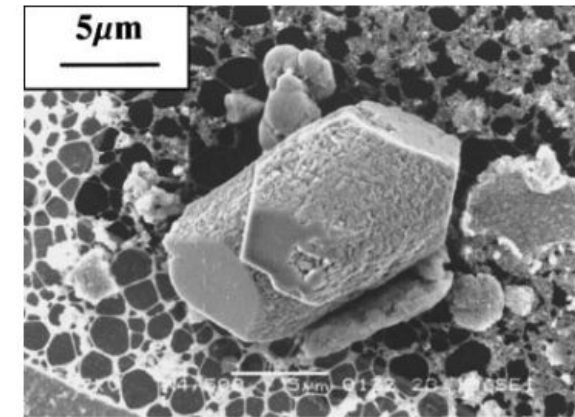


Instant Pineal Activation • Pure Tones • (Warning Extremely Powerful!)
11M views · 5 years ago
Transcending Vibrations
Delta, Theta, and Alpha Monaural Brainwave Entrainment Complete Schumann Resonances Complete Solfege Frequencies ...



Interesting Properties

- There are calcite crystalline structures located in the pineal gland that appear to have piezoelectric properties.^{2,3} That is, the structure of the pineal gland seems capable of generating electricity from mechanical pressure. No other location in the brain has these structures.
- The pineal gland is one of the few brain structures that sits outside the blood-brain-barrier with highly permeable capillaries allowing a wide category of compounds to reach the pineal gland from the blood and vice versa.
- Neurons in the pineal gland are derived from photoreceptive (i.e., light sensitive) cells, suggesting the pineal may be an “atrophied photoreceptor,” still visible on the surface of the head in some vertebrates as the “parietal eye.”⁴



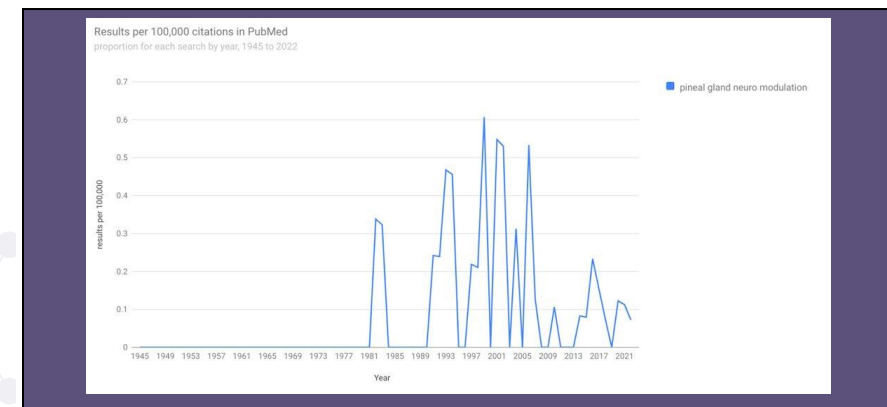
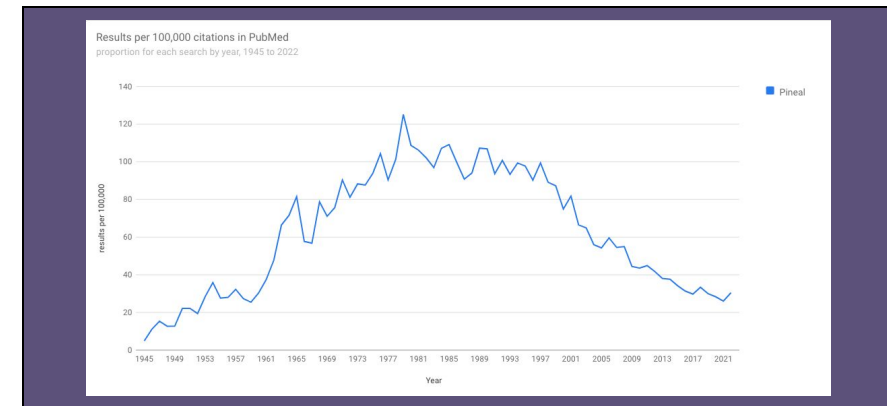
Potentially piezoelectric crystalline structures in the pineal gland



A “parietal eye” is part of the epithalamus of some vertebrates

Understudied

- Before the late 1970s, scientific interest in the pineal gland was growing rapidly.
- Over the past 50 years, however, this interest has slowed, likely due to the gland's association with pseudoscience and a broad scientific view of its function as primarily limited to circadian regulation.
- Even at its peak in the late 1990s, research on pineal gland modulation remained sparse, accounting for only about 6 articles per 1 million published.
- **To our knowledge, no study has directly modulated the activity of the human pineal gland.**



Why Study The Pineal Gland?

Specifically, why should we probe the subjective phenomena associated with direct, non-invasive pineal gland modulation?



Maybe they were on to something?

Ancient Wisdom Can Spur Modern Insight

Ancient medicinal practices have inspired the development of highly effective and scientifically proven medicines (Aspirin, Morphine), procedures (cataract surgery), and pharmacokinetics (DMT + MAOIs).



Is this snake oil?

Modern Lore Can Be Misleading and Dangerous

Hundreds of thousands of people make great sacrifices to pay millions of dollars to attend retreats focused on pineal activation that promise to relieve them of serious illness and psychiatric conditions.



Why so mysterious?

The Pineal Gland's Unique Properties are Understudied

Avoidance of pineal gland research, due to its pseudoscientific associations, presents a rich opportunity for scientists to potentially make ground-breaking discoveries about the brain and consciousness.

Without scientific data, we cannot separate potentially useful fact from potentially dangerous fiction.

What We Know

At a Glance

Anatomy and Function

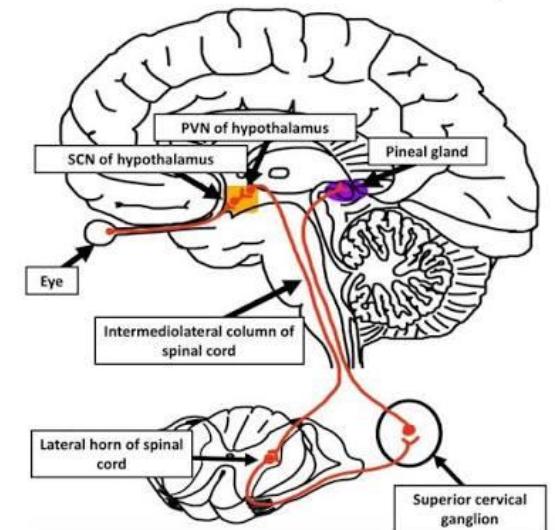
The pineal gland is a photo-neuro-endocrine organ, roughly 5-9 mm long, 1-5 mm wide, and 100-180 mg in weight. It receives information about light and darkness through a multi-neuronal pathway that begins in the retina. Light inhibits melatonin production, while darkness stimulates it.⁵

N,N-dimethyltryptamine (DMT)

The rat brain can synthesize and release DMT at concentrations comparable to serotonin, and DMT levels in the rat visual cortex rise significantly after experimentally induced cardiac arrest. The key DMT synthetic enzyme, indolethylamine N-methyltransferase (INMT), is also expressed in the rat and human brain, including the pineal gland.⁶

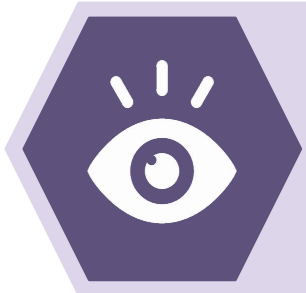
Neuromodulation

Invasive electrical stimulation of the pineal gland's sympathetic innervation pathway in rats increases melatonin production, demonstrating the feasibility of pineal modulation.⁷



Our Aims

We aim to measure the effects of pineal gland modulation through three distinct and complementary approaches.



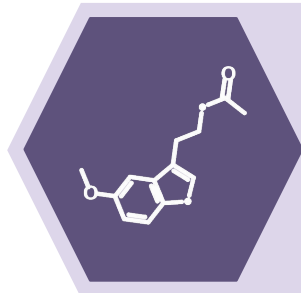
Phenomenology

Determine whether direct pineal neuromodulation alters the phenomenology of conscious experience and characterise the qualitative structure of any such change rather than compressing it to a single, global rating.



Psychophysiology

Establish its psychophysiological and circadian (sleep/wake cycle) correlates, both in session and in daily life across the weeks of participation, so as to detect delayed effects.



Peripheral Markers

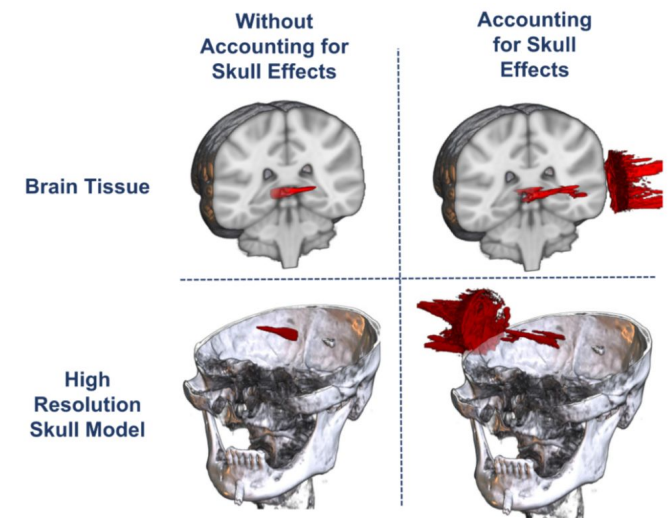
Assess the feasibility of testing changes in melatonin and N,N-dimethyltryptamine (DMT) as a peripheral marker of pineal perturbation with saliva testing.

How To Do It: Ultrasound

- Transcranial Focused Ultrasound Stimulation (tFUS) is a breakthrough technology that allows researchers to use images from an MRI to precisely target and modulate the activity of practically any region in the brain, with a high degree of precision.
- A leading theory of the mechanisms supporting tFUS is that it applies mechanical pressure to its target regions, which is particularly serendipitous with regards to the potentially piezoelectric crystals in the pineal gland.⁸ Ultrasonic pressure waves applied to piezoelectric crystals will produce electricity, which may facilitate stimulation of this region in particular.
- Ultrasound is highly effective, safe and has already been used to help wake up individuals from comatose states.



IACS uses sophisticated ultrasound procedures to target deep-brain structures



We have already modeled a lateral trajectory to safely and precisely target the pineal gland

Study Design & Measures

36 Subjects in a 4-Week Crossover Intervention

MRI, Baseline

**Pineal Gland
Neuromodulation**

**Active Control
Neuromodulation**

**Sham
Neuromodulation**

**the order of sites receiving neuromodulation will be counter-balanced across subjects*

Week 1

- MRI to support precise targeting
- Obtain baseline trait measures to capture changes + account for individual differences

Week 2

- Ultrasound stimulation to Target 1.

Week 3

- Ultrasound stimulation to Target 2.

Week 4

- Ultrasound stimulation to Target 3.

- Collect real-time ratings of experiential depth and intensity via probing.
- Collect continuous psychophysiology measures, including heart rate, heart rate variability, respiration rate, and electrodermal activity.
- Conduct post-session microphenomenological interview.
- Administer state and trait measures of non-dual awareness, ego dissolution, meditation depth, interoceptive awareness, mindfulness, and mood.
- Monitor sleep timing and architecture across the full multi-week protocol via Garmin devices.

Why Us?

- IACS is a 501(c)(3) non-profit that conducts innovative research at the interface of academic rigor and startup flexibility. Our network of collaborators and university appointments — including UCLA, Harvard, and Vanderbilt — positions us as a top-tier private research institute with minimal bureaucracy.
- Our team consists of world-leading experts in tFUS, neuroimaging, and experimental design; we are already using tFUS to induce deep meditative states.
- Our team is uniquely positioned to conduct a thorough, unbiased scientific investigation, despite this topic's association with pseudoscience and controversy.
- Our laboratory has extremely low overhead costs due to other sources of funding, so we can conduct this novel research on a remarkably low budget.

Nicco Reggente, Ph.D.
Principal Investigator



Joshua Gerber, BA
Study Coordinator



Amber Hopkins, MA
Neuromodulation Specialist



David Vago, Ph.D.
Advisor

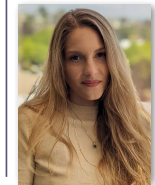


Matthew Sacchet, Ph.D.
Advisor



Legacy Team

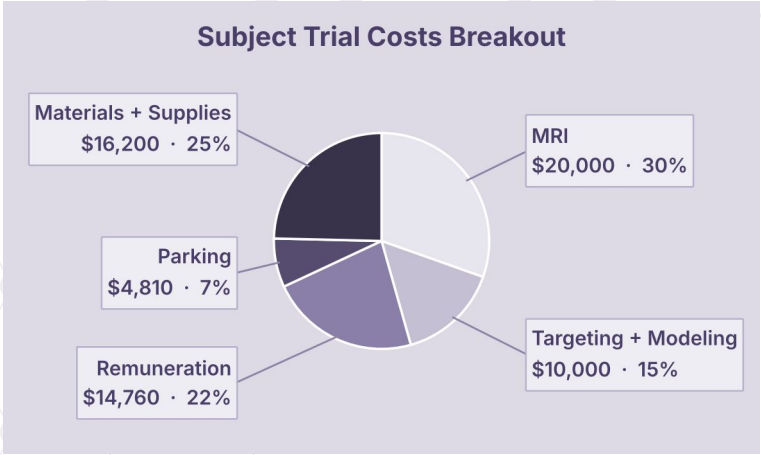
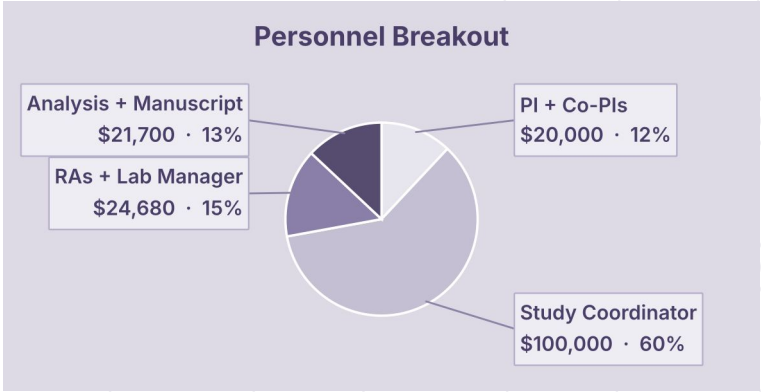
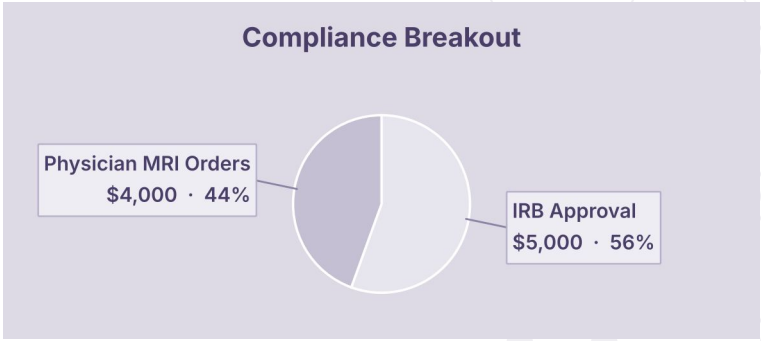
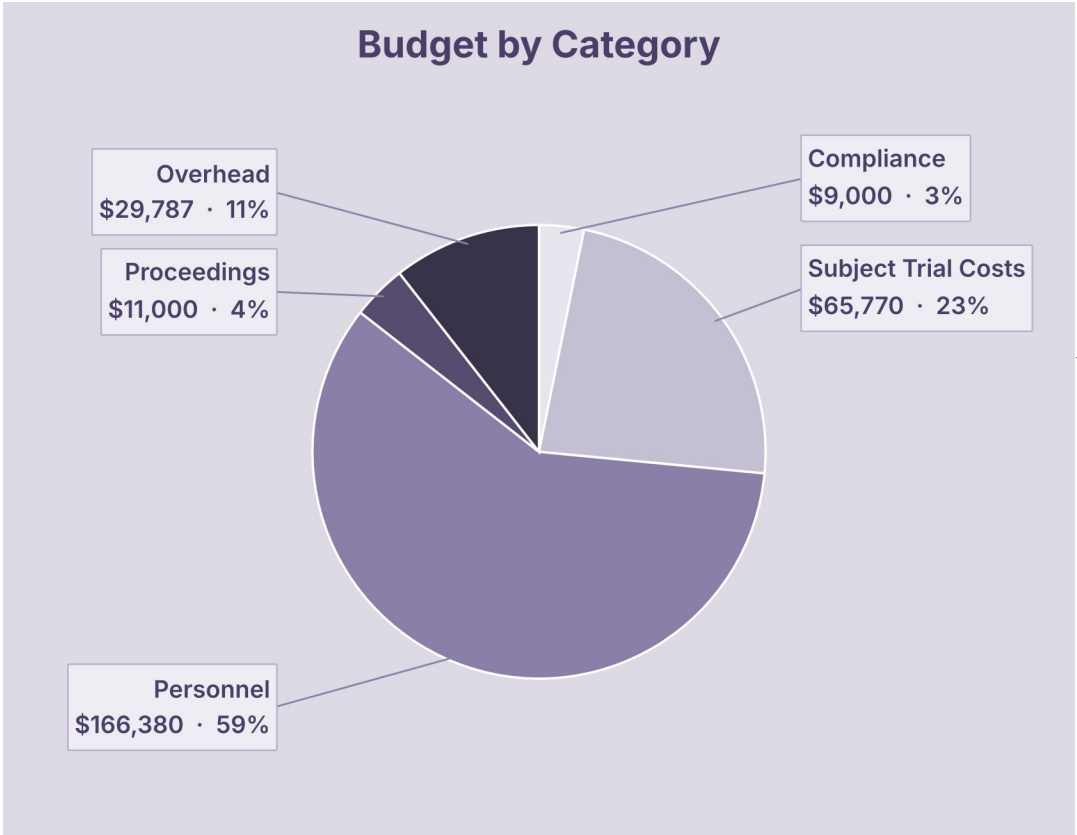
Jezabel May, MA



Joshua Cain, Ph.D.



Budget: \$282k



What That Gets Us and You

By making a tax-deductible donation, you are:

- **Helping make known the unknown** by injecting information into a domain of science that is criminally understudied yet over-zealously touted.
- **Funding personnel** who are genuinely committed to conducting this first-of-a-kind research endeavor.
- **Positioning yourself at the new frontier** of exploring esotericism with scientific rigor and open minds to separate signal from noise.

OUR COMMITMENTS

Pre-Registration

We will pre-register our study design in a high-impact, peer-reviewed publication, so the results are readily accepted by the scientific community with minimal potential for bias.

Popular Press

Regardless of the results, we are committed to popularizing this research through an international conference tour, popular press write-ups, and interviews.

Donation Tiers

1

\$5-\$49

Acknowledgement

Optional inclusion in the acknowledgements of any publications and popular write-ups.

2

\$50-\$249

Quarterly Study Newsletter

Access to our quarterly newsletter following the study's progress before it goes public.

3

\$250-\$999

Monthly Theory-Review Blog

Access to our monthly blog covering key theory and studies in the field of contemplative neuroscience. For those who want to learn!

4

\$1,000-\$4,999

Group Q&A

Virtual Q&A with other donors and the research team at the study's conclusion.

5

\$5,000-\$24,999

Private Call with the Team

A private 30-minute call with the research team at the study's conclusion — discuss key findings and ask your own questions one-on-one.

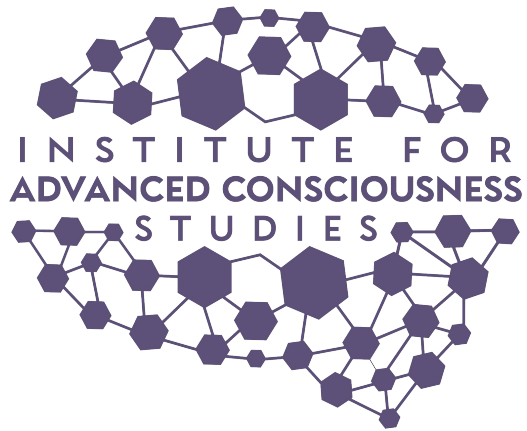
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\$25,000+

On-Site Visit + Custom 3D-Printed Brain Model*

Visit to our Santa Monica lab — meet the team and get a customized 3D-printed model of your brain (*MRI eligibility required, in-person)!

Donation tiers are cumulative: each tier includes its own offer and those of all tiers below.



Make a Donation

<https://donorbox.org/the-world-s-first-pineal-gland-stimulation-study>

THANK YOU

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nicco@advancedconsciousness.org

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<https://www.advancedconsciousness.org>

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