



Natural products.  
Validated.

# Radicle Science Overview

Radicle Science was borne  
of our innate belief that there  
is a better way.



# OUR RADICLE VISION

Since the dawn of civilization, humans have turned to natural products for healing. Many such remedies are still used by billions around the world. Yet lack of funding, slow speed, and high cost of clinical trials—not to mention the risk aversion of traditional institutions—stand in the way of legitimate research on these treatments.

Worse still, the small size and strict criteria of traditional trials significantly reduces their relevance to real-world heterogeneous populations. The result is a lack of evidence on natural product safety and efficacy that limits their full potential as affordable, accessible treatments for all, while also eroding trust in this massive industry.

No More! Driven by our frustrations with the current ineffective model, and our effort to accelerate our original missions we established at the [UCLA Cannabis Research Initiative](#) and the [Wholistic Research and Education Foundation](#), we joined forces to co-found Radicle Science. We knew we would **plummet the cost and time of research by at least 10x, while still generating rigorous health data**, if we could;

- Avoid federal funding restrictions
- Bypass institutional bureaucracy
- Eliminate physical infrastructure
- Run our studies in a virtual, direct to consumer, crowdsourced fashion.

Just as importantly, we saw this as a unique opportunity to bring much needed **equity** and **diversity** into medical research. The unprecedented scale and reach of our intentionally heterogeneous studies finally enables **inclusion** of diverse ethnicities, genders, age groups, behavioral habits, and pre-existing health conditions to move us closer to personalized medicine for the population at large.

Radicle Science was borne of our innate belief that there is a better way. We believe it is time to create a world where affordable natural products are trusted by patients, recommended by healthcare providers, reimbursed by insurance, and are used as widely as pharmaceutical drugs. At its core, Radicle is a *Rebellion* against the status quo of healthcare and research and a *Movement* towards democratized, personalized treatments that have the potential to deliver well-being for all future generations. That's the world we are creating, and we want you to join us. It's not a crazy idea. It's a **Radicle** one.



Radicle Science Co-founders & Rebels With a Cause

# THE OPPORTUNITY

The natural medicine industry in the U.S. is a \$62B market growing at a >20% CAGR, and includes everything from herbs, aromatherapy and probiotics to nootropics, functional mushrooms and cannabis. The first natural product category Radicle Science is focused on is *Cannabis sativa L*—the most widely used yet least understood plant in the world.<sup>1</sup> The global hemp-derived CBD industry was valued at \$2.8 billion in 2020, and is expected to expand at a breakneck compound annual growth rate (CAGR) of 21.2%, reaching [\\$13.4B by 2028](#). This phenomenal demand for CBD is on top of the projected expansion of the (legal) global cannabis/THC industry to a whopping [\\$70.6B by 2028](#). U.S. consumption is no exception to this worldwide trend as 33% of Americans in a [2020 SingleCare survey](#) indicated they have tried CBD, and 14% of Americans in a [2019 Gallup poll](#) indicated they currently use CBD.

In spite of this wide-spread and growing use, lack of funding, slow speed, and high cost of clinical trials prevent legitimate research on these treatments. Further complicating matters, any institution that receives federal funding (which is virtually every university) and wants to study cannabinoids is forced to use either [the monopoly source of federally grown cannabis](#) or one of the few FDA registered pure pharmaceutical cannabinoids, none of which are representative of the thousands of different cannabinoid products available to consumers.

Given the current state of affairs, the [findings of a 2019 Nielsen study](#) come as no surprise: the top two barriers preventing consumers from trying CBD are (1) “lack of research on its health benefits” and (2) “inability to gauge the effectiveness of specific products.” It comes as no surprise that stakeholders like consumers, regulators, researchers, healthcare providers, insurers, retailers, and manufacturers struggle to make policy, business, or health decisions because of the lack of data.

Radicle Science is changing the paradigm! Our offerings provide the first path to natural product validation at scale, starting with the CBD and federally legal cannabinoid industry and then moving on to validating adjacent natural product markets such as state-legal cannabis/THC, nootropics and functional mushrooms. Since our inception in November 2020, our transformative clinical trials and proprietary data analytics platform are already clocking in at 10x cheaper and faster compared to traditional clinical trials while maintaining scientific rigor.

We have, in essence, democratized the clinical trial process, enabling any natural health product or brand big or small to undergo validation and prove their effectiveness. We believe that rigorous clinical trial data + natural health products = democratized medicines for all future generations.

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<sup>1</sup> *Cannabis sativa L* is the official name of the species of plant that has low-THC varieties (i.e. “hemp”) and high-THC varieties (i.e. “marijuana”). To avoid confusion as well as the racist past of the term “marijuana”, it is common practice to use “hemp” or “CBD” in reference to the low-THC variety legal at the federal level and “cannabis” or “THC” to refer to the high-THC variety legal only in certain states. We abide by this practice in all of our communication.



# OUR OFFERINGS

## Radicle Real World™

- 4-week, unblinded, randomized controlled trial (RCT) of cannabinoid products against waitlist control
- Products must contain at least one cannabinoid, be legal for distribution across state lines and can contain other legal dietary supplement ingredients
- Results ready in ~120 days from launch of study
- Generates longitudinal Real-World Evidence (RWE) from naive users in areas including behavior and characteristics, health status, dosing, usage patterns, effectiveness for various health outcomes, onset and duration of effect, side effects, and possible predictors/modifiers of treatment response
- Quality compliance and assessment required for brand participation

## Radicle Discovery™

- 4-week, blinded, RCT of cannabinoid products against placebo or active control
- Products must be legal for distribution across state lines
- Simultaneously test multiple products (including formulations, form factors, and/or dosages) head-to-head to assess differential effects on a variety of need states and health outcomes
- Accelerates product development by discovering the most optimal product for a given need state and/or target user
- Quality compliance and assessment required for brand participation



***COMING SOON!***

### **Radicle Snapshot™**

- Survey of existing customers of a brand's cannabinoid product (which can include a state-legal cannabis product that cannot be distributed across states lines)
- Brand recruits a minimum of 300 of their customers and incentivizes them to complete the survey
- Generates RWE at a single point-in-time from existing customers in areas including demographics, behavior, health status, dosing, usage patterns, perceived effectiveness for various health outcomes, onset and duration of effect, and noticeable side effects
- Certificate of Analysis and copy of label required for brand participation

***To learn more about Radicle Science and our offerings, email [transform@radiclescience.com](mailto:transform@radiclescience.com) to schedule a free consultation.***



# COMPANY PROFILE



[Radicle Science](#) is a transformative healthtech B-corp offering the first ever path to natural product validation at scale. Radicle Science disrupts the traditional clinical trial model by combining the reach of a market research company, the scientific rigor of a research university, and the agility of a tech company. Operating at the intersection of big data, digital health, and

natural products, Radicle Science leverages a proprietary data analytics platform and a virtual, direct-to-consumer (D2C) model to deliver objective health outcome data across diverse populations and conditions. Our Radicle Vision is a future where affordable, accessible, natural health products are trusted by patients, recommended by healthcare providers, reimbursed by insurance, and used as widely as pharmaceutical drugs.

Our founding community partners include [Wholistic Research and Education Foundation](#), [Clean Label Project](#), [Opennest Labs](#), and [Trailblazers](#). Our studies are designed in collaboration with faculty from UCLA, UC Irvine, Scripps Research, Scripps Health, University of Washington, and Johns Hopkins University. We leverage a third party testing partner, [Anresco Laboratories](#), to ensure quality and purity of all products in our clinical studies.

[Our company and team](#)—from our founders and executive team to our advisors and researchers—includes some of the foremost experts and trailblazers on clinical trials, cannabis and cannabinoids, big data and analytics, public health, pharma, FDA, insurance, media, and entertainment, and computational drug discovery. We came together to uncover the objective health outcome data behind natural products to unlock broad access to safe and effective treatments for all.

*To learn more about Radicle Science and our offerings, email [transform@radiclescience.com](mailto:transform@radiclescience.com) to schedule a free consultation.*



# FOUNDER BIOS

### **Pelin Thorogood, M.Eng, MBA**

Executive Chairwoman & Cofounder, [Radicle Science](#)

President & Cofounder, [Wholistic Research and Education Foundation](#)

[LinkedIn](#)



Pelin Thorogood is a tech executive turned impact entrepreneur who has made a career at the forefront of emerging business trends and disruptive technologies. With an unwavering focus on data and analytics throughout her career, Pelin is Co-founder and Executive Chairwoman of Radicle Science, a health tech B-corp at the intersection of digital health, big data, and natural products.

Previously, Pelin was CEO of Anametrix, an award-winning multi-channel analytics platform (acquired by Ensignt in 2014) and CMO of WebSideStory, the pioneer in web analytics (IPO in 2004, acquired by Omniture/Adobe in 2008). The potential for CBD-rich therapeutics to deliver significant health benefits has led Pelin to co-found Wholistic Research and Education Foundation in 2017, a public non-profit (501c3) dedicated to cannabis research and education and advocacy, where she serves as President.

With a deep commitment to community, education, and entrepreneurship, Pelin is also a trustee and treasurer of the UC San Diego Foundation, serves on the Executive Board of the UC San Diego Basement, a campus-wide incubator and startup hub that runs innovation and entrepreneurship programming and is the Co-Chair of the UC San Diego Council for Innovation and Entrepreneurship.

Pelin holds a B.S. in Operations Research, Masters in Engineering, and MBA degrees, all from Cornell, where she also serves as Industry Scholar for Cornell Institute of Healthy Futures.

## Radicle Science Overview

### Jeff Chen, MD, MBA

CEO & Cofounder, [Radicle Science](#)

[LinkedIn](#)



Dr. Jeff Chen is the Co-founder and CEO of Radicle Science. He's the Founder and former Exec Director of the UCLA Cannabis Research Initiative (one of the world's 1st), which he grew to encompass over 40 faculty conducting research, education, and policy projects.

Jeff has experience as Founder, Managing Partner, Investor, Board Member, and Advisor to companies, not-for-profits, and venture firms in life science, sustainability, tech, and media. Dr. Chen has been featured in *Rolling Stone*, *Wall Street Journal*, *VICE*, *CNN*, *TIME*, *NPR*, *Entrepreneur*, *Business Insider*, *Politico*, and he's part of the Medical Team at Healthline Media (86M visitors/month). He's a David Geffen Fellow, U.S. patent holder, Industry Mentor for the U.S. National

Institutes of Health Innovation CORPs, and Chief Science Officer of the Wholistic Research and Education Foundation.

Jeff earned his MD and MBA concurrently at UCLA on a full merit scholarship, following a B.S. at Cornell.





# FREQUENTLY ASKED QUESTIONS

We're happy to help you with anything you'd like to know about Radicle Science. Check below to see if your question is answered, or feel free to [email us](#) to learn more about what we do.

### **What can Radicle Science do for my natural product brand?**

Radicle Science validates natural product efficacy to differentiate your brand, build credibility, and drive revenue. We do this by reimagining the traditional pharmaceutical and academic research model to deliver rigorous health outcome data at a fraction of the time and cost. Our virtual, direct-to-consumer clinical trials offer the first ever path to natural product validation. Contact our team to learn more about what we do.

### **Why “Radicle” Science?**

Radicle refers to the root of a plant, connecting to our mission to go back to the roots of mankind's original products, heal with the roots of nature, and get to the root of the problem.

Said out loud, it sounds like "Radical Science." This serves as a constant reminder of our audacious business model and our radically disruptive approach, balanced by our commitment to scientific rigor and evidence.

### **What makes Radicle Science different from any other virtual CRO?**

Radicle Science gives you differentiation and actionable insights by discovering how customers experience your natural product products in the real world as well as in controlled trial settings. Our big data approach offers a unique analysis of demographic or behavioral variations. Our offerings are rigorously designed by experts, leverage a turnkey methodology, and provide actionable insights rapidly.



# Radicle Science Overview

## Who does Radicle Science work with?

Radicle Science works with both brands and individuals. We are currently focusing on the CBD and cannabinoid industry and will expand over time to include other natural products such as medical cannabis, nootropics, and microbiome interventions

We have, in essence, democratized the clinical trial process, enabling any natural health product or brand big or small to undergo validation and prove their effectiveness against placebo control. We believe that rigorous clinical trial data + natural health products = democratized medicines for all future generations.

## Is my brand right for Radicle Science?

Radicle Science is currently focusing on brands that currently produce or are trying to develop high quality CBD or cannabinoid-based products. Contact our team to learn more about how Radicle Science can help your brand differentiate itself, build credibility, and drive revenue.

## What is the vision behind Radicle Science?

Radicle Science has a singular vision –we will challenge the status quo by democratizing the clinical trial process and unleashing personalized health outcome data. Our vision is a future where affordable natural products are trusted by patients, recommended by healthcare providers, reimbursed by insurance, and used as widely as pharmaceutical drugs.

## Radicle Science is a B-corp. What does that mean?

A benefit corporation, or B-corp, is a for-profit corporation recognized by the majority of U.S. states that is driven by both mission and profit. Shareholders hold the company accountable to produce a financial profit as well as a specified public benefit.

As a Delaware Public Benefit Corporation, our commitment to ***"increase public awareness of safe and affordable treatment options for the benefit of individuals who are in need of such treatments by studying and sharing objective health outcome data"*** is part of our corporate charter, as stated in our certificate of incorporation.

