

**BEFORE THE PENNSYLVANIA  
HOUSE HEALTH COMMITTEE**

**TESTIMONY OF**

Billy Woolf  
Chief Operating Officer  
Steep Hill Laboratory Pennsylvania

**ON BEHALF OF**

The Pennsylvania Cannabis Coalition

**REGARDING**

CBD's Impact on the  
Medical Marijuana Program

Pennsylvania State Capitol  
Ryan Office Building, Room 205  
Harrisburg, Pennsylvania  
Tuesday, March 3, 2020

**Chairwoman Rapp, Chairman Frankel  
and Members of the House Health Committee**

My name is Billy Woolf, and I am the Chief Operating Officer of Steep Hill Pennsylvania, a licensed Medical Cannabis Testing Laboratory. I appear here today on behalf of the Pennsylvania Cannabis Coalition (PCC).

In sharp contrast to our PA Medical Marijuana Law (PA Act 16-2016) which brought access to high-quality cannabis products to patients through a controlled and regulated supply chain, the de-scheduling of cannabidiol (CBD) in the 2018 Farm Bill unleashed a flood of hemp-derived CBD products to an unregulated retail market with unprepared consumers.

The legal and social stigma of over 80 years of cannabis prohibition have left a huge "knowledge gap" in our understanding of the cannabis plant and its uses. Confusion abounds as our citizens lack the confidence to make important choices about new treatment options that may improve their own health. As stakeholders in the well-being of every Commonwealth citizen, the now is the time to raise our own awareness of the plant's beneficial properties and uses if we are to successfully advance meaningful new law and policy.

A proud son of Harrisburg, I grew up just a few blocks up the street on this very same North Third Street, but I took the "path less-traveled" to get here today for this special downtown trip. Along the way I've earned degrees in Analytical Chemistry, Biomedical Engineering, and Project Management, attended Law School, worked professionally in medical research and data consulting, and owned and operated a steel construction business for over 25 years here in Central Pa.

Without any good options for cannabis training a few years ago, I assembled a "curriculum" of my own from few available resources. Industry certification as a Patient Focused Certification Verified Professional (PFCVP) through the Americans For Safe Access (ASA) validates my training in Best Practices. And the Oaksterdam Cultivation and Business Programs (Oakland, California) highlights the breadth of my industry preparation. Whether it be destiny or a career renaissance, it is truly satisfying to work in a new field that requires me to use every one of my technical and business skills in the operations and compliance work I perform daily as a cannabis professional.

And now, as an educator, I pay this knowledge forward as an Adjunct Professor of Medical Cannabis Education at HACC, Central Pennsylvania's Community College, where I prepare passionate students with the workforce skills needed to succeed in this exciting yet challenging new industry.

Thank you for the opportunity to provide my testimony before you today.

--

### **Medicinal Cannabis and Industrial Hemp**

Generally speaking, there are two important types of plants in the world of cannabis – medicinal plants and hemp plants. Industrial Hemp plants are grown for fiber and hempseed oil. Medicinal plants include both psychoactive THC-rich plants and non-psychoactive CBD-rich plants.

The main difference between hemp and medicinal plants is the amount of resin they produce. Hemp plants are low-resin plants and medicinal plants are high-resin plants. Industrial hemp varieties are typically a low-resin agricultural crop, grown from pedigree seed, with about one hundred tall, skinny plants per square meter, machine harvested and manufactured into a multitude of products. Medicinal plants are a high-resin horticultural crop, typically grown from asexually reproduced female clones, 1 to 2 plants per square meter, hand-harvested, dried, trimmed and cured.

### **The Modern Era of Medical Marijuana**

The Modern Era of Medical Marijuana began in the early 1960's with the isolation of the CBD and tetrahydrocannabinol (THC) molecules by Dr. Raphael Mechoulam, an Israeli scientist. Inspired by centuries of anecdotal evidence of cannabis healing, Mechoulam's research group continued to uncover the relationship between beneficial plant compounds and their physiological interactions within the Endocannabinoid System (ECS) within our bodies. Dubbed "The Father of Medical Marijuana," Mechoulam's work was "peer reviewed" and accepted by the scientific and medical community in 1992, which led the way for California to become the first state to legalize medical marijuana in 1996.

## **THC and CBD**

Pure THC and CBD are both odorless and colorless at room temperature, have the same molecular formula ( $C_{21}H_{30}O_2$ ) and molecular weight (314.46 g/mol), but are found only in small amounts in the raw plant. They are just two compounds from a family of around 113 cannabinoid compounds found naturally in cannabis. Only a slight difference in molecular structure is what gives the two compounds entirely different pharmacological properties. The final products of THC and CBD are converted via a chemical process called "decarboxylation", from their "acid" form pre-cursors tetrahydrocannabinolic acid (THCA) and cannabidiolic acid (CBDA), which are produced in much larger amounts by the plant.

The main difference between THC and CBD is that THC is psychoactive, and CBD is not. CBD has significant medical benefits and can actually counteract the psychoactivity of THC. This makes CBD an appealing treatment option for patients seeking anti-inflammatory, anti-pain, anti-anxiety, anti-psychotic, and/or anti-spasmodic effects without troubling lethargy or dysphoria. Though psychoactivity can be seen by some as an undesirable side-effect, THC on its own is used effectively in many ways as an analgesic, anti-nauseant, anti-anxiety, appetite stimulant, sleep aid, and to reduce the chronic pain of muscle spasticity.

## **The Entourage Effect**

THC and CBD are the power couple of cannabinoid compounds because they work best together. Scientific studies have established that CBD and THC interact synergistically to enhance each other's therapeutic effects. CBD combined with THC require lower effective doses, have a wider therapeutic window, potentiate THC's anti-inflammatory properties, has a more potent anti-tumoral effect in certain cancer treatments, and is more beneficial for neuropathic pain than either compound as a single molecule.

In addition to THC and CBD, cannabis contains several hundred compounds, including various flavonoids, aromatic terpenes, and many minor cannabinoids. Each of these compounds has specific healing properties, but when combined they create what scientists refer to as an "entourage effect" where the therapeutic impact of the whole plant is greater than the sum of the individual parts.

## **Hemp Derived Products**

While it may be possible to extract CBD from some low-resin industrial hemp cultivars, fiber hemp is considered a poor source of cannabidiol (CBD) because it typically contains far less CBD and lacks critical medicinal terpenes and other plant compounds that interact with CBD and tetrahydrocannabinol (THC) to enhance their therapeutic benefits. Huge amounts of industrial hemp are required to extract a small amount of CBD, thereby raising the risk of contaminants because hemp is a "bio-accumulator" that can draw harmful substances from the surrounding soils.

Unfortunately, the lack of oversight in manufacturing hemp-derived CBD products, has led to confusion, deception and contamination. Blind testing of unregulated hemp-derived products has found that many are mislabeled as to CBD and THC content. Poorly processed CBD products may be contaminated with dangerous solvent and pesticide residues, heavy metals, microbiological threats, thinning agents, corn syrup, artificial flavors and colors, and other toxins.

Until confidence in retail CBD products can be assured through a program that includes laboratory testing, we urge citizens with qualified conditions seeking CBD therapy to register in the safety of the Medical Marijuana Program. Doctors and Pharmacists and other skilled professionals are already available to guide and train new patients toward micro-dosed therapies with low or no psychoactivity. However, well-intending citizens who may not qualify for the program ironically remain at risk of harm from unregulated retail products.

--

Thank you again for your invitation to appear today, and I welcome any questions you might have for me.

## CONTACTS

Steep Hill Pennsylvania  
6360 Flank Drive, Suite 700  
Harrisburg, PA 17112  
phone: (814)419-6347  
Dr. Andrew Rosenstein, CEO  
email: [info@pa.steePhill.com](mailto:info@pa.steePhill.com)

Pennsylvania Cannabis Coalition  
204 State Street  
Harrisburg, PA 17101  
phone: (717) 433-0987  
Andrew Blasco, Executive Director  
email: [ablasco@pcanna.org](mailto:ablasco@pcanna.org)

## VITAE

### William Alan Woolf

B.S. Chemistry (1979)  
The George Washington University

M.S. Medical Engineering (1982)  
The George Washington University

M.S. Technical Management (1988)  
The Johns Hopkins University

Widener University School of Law (Attended)  
Harrisburg Campus

PFCVP Patient Focused Certification Verified Professional (2017)  
Americans for Safe Access

Adjunct Professor of Medical Cannabis Education (2019)  
HACC, Central Pennsylvania's Community College