

MED TECH
OUTLOOK TOP 10
MEDTECH
STARTUPS - 2022

MAKING EVERY BREATH COUNT

PURE SCIENTIFIC TECHNOLOGIES INC.

L. MICHAEL CUTRER,
PRESIDENT, CEO,
AND DIRECTOR

By Alex D'souza

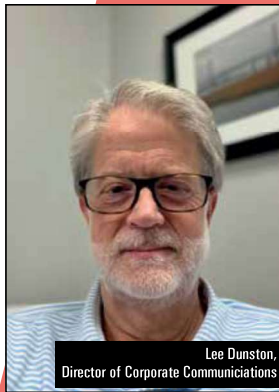
Helium is the fabric of the cosmos, accounting for about 25 percent of the atoms in the universe. Oxygen, on the other hand, is the reason life exists on our planet. Bring these two elements together—in a mix of typically 80 percent helium and 20 percent oxygen—and you get heliox, a gas that can help critically ill patients breathe. It has been used with FDA approval since the 1930s to alleviate severe pulmonary distress, even in babies. Today, it maybe the hope for patients with severe respiratory infections, or even cancer. More easily absorbed by the lungs than oxygen or air, its smaller, lighter molecule provides patients with an easier means not to have to fight for each breath. As a carrier gas, its therapeutic touch can aid in healing lung obstructions by delivering therapeutics deeper into the distal regions of the lungs where traditional inhalers generally cannot reach.

Irvine, CA-based Pure Scientific Technologies Inc. ("PST") is striving to ensure every patient with asthma, chronic obstructive pulmonary disease or other severe pulmonary conditions has the opportunity to use heliox and reap its benefits.

IRWIN A. OLIAN,
EXECUTIVE CHAIRMAN
AND DIRECTOR



Mary Baldauf, MD, Director, MedTech Consultant



Lee Dunston, Director of Corporate Communications



Philip Cacayarin, VP Technology and Co-Founder



Henry Chow, CPA, C.A., CFO



Martin Urban, MD, MMM, Director



BY LEVERAGING HELIOX AS THE CARRIER GAS, OUR AIM IS TO MAXIMIZE THE BENEFITS OF DRUGS THAT TREAT DISEASES SUCH AS LUNG CANCER, CHRONIC BRONCHITIS, ASTHMA AND OTHER OBSTRUCTIVE PULMONARY CONDITIONS



"We are developing new technology to effectively bring the application of Heliox into the everyday world as a user friendly, affordable way to potentially treat many kinds of pulmonary conditions," says Irwin A. Olian, Executive Chairman and Director of PST.

The company's mission is to equip patients with a better alternative to conventional inhalers or nebulizers, a new medical device using its patent-pending technology that is portable, affordable and a potentially more effective means of delivering medications. The company achieves this through its PST Heliox Inhaler.

A Closed-Loop Heliox Delivery System for Lasting Relief from Pulmonary Diseases

Pulmonologists and pulmonary therapists agree that the existing heliox equipment in hospitals is long overdue for an

upgrade. The gas is typically stored in large tanks creating a continuous flow of heliox, requiring heavy apparatus and a technician to monitor it. To make the best use of heliox, PST is creating a digitally controlled, lightweight, economical and user-friendly device that is available for use within a matter of seconds.

The company's closed-loop, portable Heliox Inhaler brings critical care technology directly to the patient's home. The digitally-controlled device is no larger than a desktop computer and does not hinder the patient's mobility. It is designed to be easily used in homes, health practitioner offices, urgent care centers, and other medical facilities to deliver accurate doses. Lightweight and portable, PST's heliox inhalers can be carried along when traveling. This is especially beneficial for critically-ill patients, who might otherwise need to be confined to their homes. Despite the

sophistication of the underlying technology, the device is designed with simple user interface controls, making it easy for patients and physicians to operate.

Setting up PST's device is fairly simple. Users install a heliox cartridge and regulator and plug the device into the wall socket. With a tap on the touchscreen, the device will turn on, and an interactive interface will guide patients through the process. The handpiece, which is docked in the main housing, is used to release the medication. As the patient presses the trigger button and inhales, the device delivers the desired pharmaceutical (liquid or powder) or holistic therapeutic in the purest form directly to the lungs using heliox.

"By leveraging heliox as the carrier gas, our goal is to maximize the benefits of drugs that treat diseases such as lung cancer, chronic bronchitis, asthma and other obstructive pulmonary conditions," says L. Michael Cutrer, President, CEO, and Director of PST. "Hence we have adopted the slogan 'Striving to make medicine work better for you,'" he adds.

The company takes pride in the potential of its technology to deliver medications to more distal lung tissues. Studies have shown that patients with lung cancer could potentially use the Heliox Inhaler to deliver treatment directly and more efficiently to the affected target tissue.

The heliox inhaler system comes with a companion app, which enables users to pair the device with their smartphones via Bluetooth. While the app is not required to operate the device, it is a value-add as it provides relevant insights. The app allows users to view the historical data of device use while assisting them in tracking the replacement of heliox cartridges. The information can be reviewed by the physician and used to adjust dosage based on recovery. The app also provides useful device information, including instructional diagrams, which the users can leverage to troubleshoot the device.

Cutrer adds, "We believe our Heliox Inhaler has the potential to be an effective tool for treating chronic obstructive diseases and asthma, and even for chemotherapy delivery, because it's potentially just much more efficient."

PST is preparing to release its first product, an inhaler designed to deliver CBD from hemp directly to the lungs in vapor form before year-end.

Accelerating Device Production to Meet Patient Needs

PST has created an alliance with a leading medical product development firm, Nectar, Inc., to bring the innovative drug delivery idea to fruition. This enables PST to keep its product development expenses reasonable while facilitating superior functionality. The company is also undertaking many studies to

assess its device functionality with different drugs, including albuterol.

Offering someone a new lease on life requires work and dedication. It takes a great product and an even greater team working toward a collective vision. PST's team is a mix of doctors, critical care specialists, medical device specialists and engineers who bring years of research and experience in developing medical devices.

For PST, the coming year is pivotal as it launches its initial product for CBD and moves down the path for FDA approval of its pharmaceutical inhalers, while developing marketing and sales programs to create success. Management believes it will be ready for every challenge in its path. The company plans to seek strategic relationships with medical facilities, universities, individual doctors, small clinics, holistic practitioners, and other health professionals. Its goal is to



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make the PST Heliox Inhaler a mainstream delivery system for a wide range of pharmaceuticals treating pulmonary conditions. PST has thus far raised \$2.5 million to fund its R&D and filed for national and international patents, while simultaneously manufacturing and designing the working prototype.

The company's role in facilitating seamless drug delivery to lungs with portable and handheld inhalers without patients having to go to hospitals is certainly a step in the direction of facilitating truly patient-centric, value-based care. The team is excited about the future! 🇺🇸