

## Doctorate Awarded for Groundbreaking Bio-Energy Research

Dr. Marcy Purnell entered the world of bio-electric dynamics in the quest to understand the curious science behind her personal experience with a foot bath product call the Aqua Chi footbath. A simple visit to a spa in Southaven, Mississippi, recommended to her by a friend, launched her on a long trek into research with the Aqua Chi. Ultimately, her research, would earn her a PhD for her discoveries. Dr. Purnell was awarded her PhD in May of 2016, from the University of Tennessee, Memphis. With her research, Dr. Purnell did more than demonstrate the beneficial properties of this technology; she made, and is still making significant contributions to the fields of bioenergy and healthcare.



Marcy Purnell, PhD

With her first experience at that Southaven spa, she found that she experienced positive health effects, including joint pain reduction and increased stamina. But, as a nurse practitioner, she wanted to discover the scientific reasons for the improvements she felt in her body. So, she began researching, and was eventually directed to Steve Walker, the creator of the Aqua Chi footbath.

Walker and Purnell conferred and, after some time, reached out to the head of the microbiology department at the University of Tennessee, Michael A. Whitt, Ph.D., who had expressed interest in the technology. They did some preliminary testing using plants, specifically strawberries, comparing the (growth) effect on experimental strawberry plants with a control. They found major differences in growth characteristics, which inspired Dr. Purnell to seek a grant from University of Memphis. She was awarded the grant and began her research. As her research progressed further, Dr. Purnell focused on the footbath's effect on cancer cells.

Cancer cells are very different than normal cells. To understand the technology, one must first understand cancer. Cancer arises from normal cells that experience uncontrollable cell growth. This happens via a number of different mechanisms. Cancerous cells grow continuously, and reproduce to form more and more cancerous cells. They produce their own blood vessels for the purposes of angiogenesis, which helps spread and feed the cancer.

Why did Dr. Purnell use cancer cells? Perhaps it is because they are immortal and never stop reproducing. If Marcy Purnell could demonstrate a change in the behavior of cancerous cells by exposing them to the bio-energetic field produced by the Aqua Chi footbath, it might pave the

way to eventually treat cancer and other diseases without the chemicals which are often administered via drugs.

Pharmaceutical companies create drugs that block biochemical signaling in cells, which is an unnatural process. Cells must respond to these foreign chemicals which often leads to side effects. Through bio-energy (harnessing quantum physics), In her work, Dr. Purnell demonstrated how the Aqua Chi harnesses biochemical energy to allow the cells to operate normally, without harmful toxins or the blocking of pathways. It provides cells with a bio-energetic signal that matches the signal present in healthy cells, which helps to reinvigorate cells. Dr. Purnell says that “medicine is good at getting people back on the path to health, but in the long-term does not treat the root causes of illness”. She hypothesized that this footbath device would be beneficial for long term health maintenance.

To understand what was happening with the Aqua Chi’s interaction with the cancer cells, she performed a genomic analysis on the cancer cells. A genomic analysis looks at the genes in the cancer cells to see just how they’ve been altered in terms of their expression. Every cell in the body, from skin cells to heart cells, to lung cells, all have the same exact DNA that codes for any and every bodily process and structure. In other words, your skin cells contain all the information necessary to produce a heart cell, if provided the proper growth factors. What makes a skin cell a skin cell is the fact that it specializes, it shuts off the other genes except the ones it needs to function. How that cell functions is through gene expression, which ultimately produces proteins. Think about your nails, for example. Nails have keratin that makes them strong. Keratin is a protein. Those proteins are made by a specific gene. If that gene is changed it will make a different type of protein. Maybe it’ll make that keratin a little tougher which would strengthen your nails. Dr. Purnell explained that as we get older, cells have a hard time of processing protein. The Aqua Chi, she found, might remedy this.

Dr. Purnell found that cancer cells treated in a hypotonic saline solution stopped growing, and displayed programmed cell death, a property of normal healthy cells. The cells normalized before death. Cancer cells don’t have programmed cell death the way normal cells do. So, by energizing the the cancerous cells, those cells re-direct back to natural pathways and kill themselves (as normal cells do). Dr. Purnell was astounded to see that the cancer cells were dying off normally.

She was sure that the water was producing bio-electro changes, but those are difficult to measure as they occur at the speed of light. She could have measured the biochemical changes that occur within a second or two, but not bio-electric changes as they take place at the speed of light.

In her dissertation at The University of Tennessee: Health Science Center titled, “Modulation of the Magnetic Properties of Aqueous Metal Ions and the Bioelectrodynamic Effects on Cancerous and Noncancerous Cells,” she explained, “Bioelectrodynamics is the study of how electromagnetism affects the biophysical functions of living organisms by examining the effects on biochemical processing at the cellular level.” Conceptually, she explains how a system called the Cellular Energy Transfer Science system describes this phenomenon by understanding how cells transform energy and how that drives day-to-day chemical processes in the body such as energy production. Specifically, she explained how the system (the Aqua Chi footbath), alters magnetic behavior of metal ions in your body by applying a direct current through a

hypotonic saline solution. A hypotonic saline solution has more water than your cells and water moves to seek a balanced state.

Dr. Purnell and her research advisor, Dr. Michael A. Whitt, used that hypotonic solution to grow cancerous and noncancerous cells in vitro. In vitro simply means in a dish. When these cells came in contact with the media, they demonstrated “growth inhibition, cell cycle arrest, hyperpolarization of transmembrane potential and apoptosis of cancerous cells while not causing a growth inhibition, cell cycle arrest or apoptosis of the noncancerous cell lines.” What does this mean? This means that cancerous cells will stop growing and kill themselves while normal cells will go on doing what normal cells do. This all happens through exposure to this hypotonic bath water.

How did the cells do it? The cancerous cells killed themselves through the “unfolded protein response (UPR), TNF/TRAIL, and p53 oncogene activation.”

Unfolded protein response is something that happens in the cell that will tag the cell for destruction when its proteins are unfolded. Unfolded proteins are not good! Proteins are important in all processes of the body. If they aren't folded properly, a whole host of bad things can happen in the body. So, your cell simply triggers this response to destroy these cells. Imagine a factory that makes pretzels. If every other pretzel (protein) is folded improperly, the machine (cell) needs to be fixed. So, the workers (UPR) try and fix the machine. If they can't fix it, they dispose of it (cell death). Imagine if they'd left that machine in that condition: all the pretzels would get burnt (cells would malfunction and the protein couldn't be used properly).

TNF/TRAIL and p53 oncogene activation work in the same way. The main point is that Dr. Purnell found the Aqua Chi to be useful in cancer because it can stop the growth of a cancerous cell that would otherwise produce bad proteins.

Noncancerous cells, she explained, “show a significant increase in cell migration/wound healing after exposure to the treated media with no activation of apoptosis pathways.” The treated media essentially gave the cells more energy to do good things and heal wounds.

Dr. Purnell is currently working on safety trials to demonstrate that the Aqua Chi is safe for use as a medical device. Once she can demonstrate that, she will be one step closer to FDA approval. So far, she has one publication available to the public, with three other publications yet to be released. Her first publication available to the public for this research is titled, “Bioelectrodynamics: A New Patient Care Strategy for Nursing, Health, and Wellness.” The paper is essentially a “concept paper,” according to Dr. Purnell.

Looking at the big picture, Dr. Purnell had little scientific evidence to go by when she started, which made her journey that much more difficult. However, anecdotal evidence gathered from users of the Aqua Chi has helped keep her steadfast and confident in this technology. People have reported to Dr. Purnell increased strength against multiple sclerosis, repairing of scar tissue, more rapid closing of wounds, allergies and asthma have been improved along with COPD, better response to treatments, lowering of blood pressure, clear thinking, lowered depression, and improvements on side effects of Huntington's Disease and Amyotrophic Lateral Sclerosis.

Dr. Purnell's goal for this research is to gain credibility for this technology so that it gains FDA approval. She has not sought to profit from the technology. Rather, she wants to move from

phase one to phase two trials on animal models, and ultimately to human clinical trials. She has demonstrated via in-vitro studies, that the Aqua Chi poses no harm to the cell, and in fact, relieves stress in a cell.

As a nurse practitioner, she has informed patients of these findings and some patients have used the Aqua Chi as an adjunct for their own healing process, specifically the patients facing the side effects of Chemotherapy, including tingling from nerve damage. She explained, “We have no clinical trial data. All I have are in-vitro studies demonstrating that it does no harm and actually relieves stress in the cells. Sometimes patients are in remission but some have side effects of chemo, and actually used the footbath and seen improvement in their symptoms.” Dr. Purnell added, “You can actually take these and have it work together for the good of the [chemotherapy] treatment.”

In terms of anecdotal reports by gender and timing, immediate results have been reported along with others reporting delayed benefit. Women generally reported faster responses than males. Males with more weight reported more intense results. Dr. Purnell explained that in many cases, most people don't realize how much it helps until they haven't used it for a few days. Dr. Purnell shared a personal experience in which she left for a trip for five days and didn't bring the Aqua Chi with her... she caught the flu.

Dr. Purnell hasn't performed any clinical studies, as her research has been mainly on the cellular and genomic levels. However, some of these studies have been performed on animal models. Animals are good comparisons to humans as they share many of the same systems as humans who are animals after all.

Although her research on the Aqua Chi is in its prime, Dr. Purnell has demonstrated that bio-energetics can have a very real effect on the health of cells. Specifically, she demonstrated that regular use of the technology positively impacts cells, and does not demonstrate any negative side effects. Rather, the Aqua Chi uses bioenergy to help the body help itself by supercharging cells, which in turn expel harmful buildup and toxins. The Aqua Chi has a lot of untapped potential, clearly. Hopefully, with time, researchers like Dr. Purnell can help pave the way to a better understanding bio-energetics and its role in the future of medicine.