



Introduction

Background and History



Unlocking the marvels of Sphagnum moss and water

The discovery of life changing products from nature has been the mainstay of advances in medicine and other industries. In today's era of custom pharmaceuticals, gene manipulation, and large scale engineering solutions to common problems, the opportunity to make a significant discovery directly from nature is truly unique. Creative Water Solutions LLC (CWS) is a modern day example of how nature's creation can still provide solutions to complex and pressing human needs.

Founders

Creative Water Solutions, LLC was founded in 2003 by entrepreneurs David Knighton M.D. and Vance Fiegel, B.S.. Knighton is a retired vascular surgeon, organic chemist, private pilot and published author. Fiegel is a cellular biologist, microbiologist and biochemist who has extensive expertise in applied science, product development, regulatory issues, and intellectual property.

They started working together at the University of Minnesota in 1985. Knighton was an Assistant Professor of Surgery and Fiegel was working in the Department of Surgery Infectious Disease Laboratory. Their partnership started when Knighton hired Fiegel to run his newly founded wound healing and cellular biology laboratory.

First Disruptive Technology

Dr. Knighton had just started Curative Technologies, Inc in 1984 based on research into platelet growth factors and their role in wound healing and angiogenesis. Vance Fiegel and his team in the laboratory headed the early research and development. Their partnership produced research that resulted in the first patented growth factor product to treat chronic nonhealing wounds. When combined with the clinical treatment algorithm developed by Dr. Knighton in the wound-healing clinic at the University, Curative Technologies became the premier wound healing company in the country. Curative Technologies went public and resulted in annual revenues of \$100 + million per year.



Second Disruptive Technology

Their second innovation, which made a significant change in clinical medicine, was the saphenous vein harvest system. Dr. Knighton working in his wound-healing clinic recognized that the incision made to harvest the saphenous vein from the inner leg for cardiac bypass surgery was a significant problem for many patients. Advances were being made in laparoscopic operative techniques that prompted Dr. Knighton to develop a system to harvest the saphenous vein through a small leg incision. The resulting patents were sold to Cardiothoracic Systems which was subsequently purchased by Guidant Corporation and then Boston Scientific. Today this product is used by over 90% of the cardiac bypass procedures in United States resulting in over \$150 million per year of sales.

Both of these innovations changed the standard of care in their respective fields. Acceptance of these new ideas took a significant amount of time, energy and perseverance due to the disruption they caused in the long standing standard of care.

Creative Water Solutions, LLC

Why Sphagnum moss? Knighton was returning from Germany to Minneapolis. Over Nova Scotia, he finished his work and asked for a magazine. The flight attendant brought three – People, Atlantic Monthly, and Golf Digest. Since he wasn't a golfer and was usually bored by People, he chose the Atlantic Monthly and read a one page article about the use of Sphagnum moss in WWI by the English, Germans, and Americans to treat war wounds. They reported that soldiers with wounds packed in Sphagnum moss survived in higher numbers than soldiers with wounds packed in cotton. His experience as a surgeon and expert in wound healing led to a hypothesis that the Sphagnum moss had to be antimicrobial to have the effect reported in WWI. After reviewing the surgical literature he discovered that some of the Sphagnum moss was harvested in northern Minnesota. Fiegel obtained various species of Sphagnum moss and began years of studies to understand the various properties of The Moss™. Laboratory testing, product testing, and patent applications led to our first product sales in 2004.

Product Progression	Trade names
Residential Spa	SpaNaturally® and SpaMoss®
Residential Pool	PoolNaturally® and PoolMoss®
Commercial Spa	SpaMoss® Pro
Commercial Pool	PoolMoss® Pro
Fountains	
Ponds	
Aquariums	
Industrial Water	ProMoss™
Homes/Animal Husbandry/Potable Water	MossNaturally™

What The Moss™ Does

The Moss™ has six functions that work in conjunction with chemicals or replace the use of chemicals in water treatment altogether.

- Absorbs water and oil
- Absorbs cations
- Clarifies water decreasing turbidity
- Inhibits organic contamination
- Inhibits corrosion

Industrial water

Our first industrial water application was in cooling towers. We have treated everything from small units for schools to a 7000 ton tower. Excellent results in cooling towers led to other industrial applications.

- Cooling towers
- Hot and cold water loops
- Glycol loops
- Process water
- Quenching water for steel and fiber optics
- Replace water softeners
- Pre treatment for RO
- Waste water
- Oil absorption
- Settling lagoons

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