

The Silicon Review

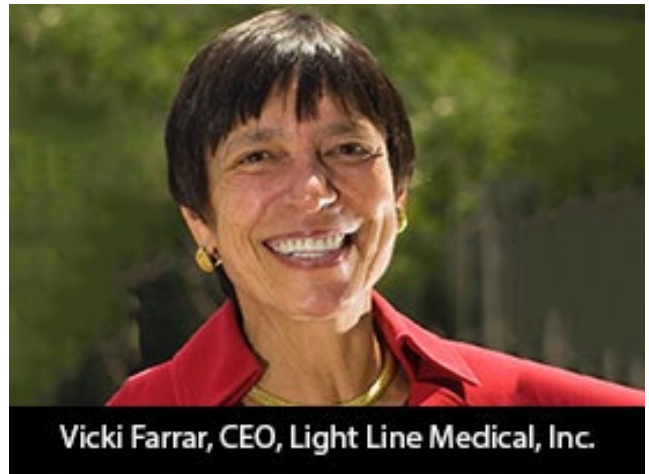
50 Smartest Companies of the Year 2022

On a Game-Changing Mission to Solve the Global Healthcare-Associated Infection Crisis Without the Use of Antibiotics: Light Line Medical, Inc.

“Our technology is transformative. It will be in hospitals, long-term care centers, and homes worldwide.”

Light Line Medical, Inc. (“LLM”) is a medical device company developing novel visible light-based photo-disinfecting technologies to prevent device-associated infections. Its products will serve clients worldwide.

The Silicon Review reached out to LLM’s Salt Lake City headquarters and spoke with Vicki Farrar, who serves as the company’s Chief Executive Officer. Here’s what she said.



Interview Highlights

Q. As a journalist, I find Light Line Medical quite striking. From the emotional branding standpoint, it has that appeal. How did you come up with the brand name? And please brief us about the history so far.

Light Line Medical was started after a team of University of Utah undergraduates participated in a competition to solve an unmet medical need. These students recognized that catheter-associated infections (CAIs) are a huge global health problem and are increasingly difficult to treat because of the growing prevalence of antibiotic-resistant pathogens (i.e., MRSA, ERSA, and CRE). To solve the problem, they investigated ultraviolet light as a possible solution but found it degrades catheter material and was unsafe for human tissue. In that research, they also found visible light has very similar pathogen-killing capabilities but was much safer. To deliver the lifesaving visible light within a catheter, the team developed an innovative fiber optic to deliver high-intensity light, successfully killing pathogens and preventing infections while doing no harm to the patient’s tissue and preserving the catheter’s structural integrity.

We came up with the Company’s name because the fiber optic appears as a violet glowing line within the catheter. Plus, of course, we like to think our Company provides catheter patients with a lifeline, and we thought “*Light Line*” was descriptive.

Q. What makes – and keeps – LLM relevant?

Antibiotic-resistant organisms, known as “superbugs”, are the third leading cause of death worldwide. Over 40% of these infections are caused by catheters used in a variety of applications (e.g., dialysis, urinary, respiratory, or vascular). This staggering statistic is evidence that there are no solutions on the market today that effectively prevent these infections. In many cases, sterile techniques (i.e., gloves and alcohol wipes) applied to the outside of the catheter is the sole infection prevention strategy. Our platform product effectively prevents infection from the inside out. This unique approach will be adaptable to each of the catheter applications mentioned above and circumvents the antibiotic-resistance problem entirely.

Q. How do LLM-developed light-based therapeutic technologies reduce device-associated infections?

Light Line’s patented PhotoDisinfection System™ (“System”) delivers visible light to a fiber optic cable inside an off-the-shelf catheter. The visible light spectrum (light that the human eye can see) is, like sunlight, a natural disinfectant that kills the microbes that cause infections. However, unlike sunlight’s UV component, it does so without harming tissue or catheter materials.

LLM’s fiber-optic uniformly irradiates the internal and external surfaces of the catheter, disinfecting it and preventing microbial formation on all catheter surfaces, resulting in the safe and effective prevention of CAI. The System has successfully killed fungus, as well as drug-resistant gram-positive and gram-negative bacteria (e.g., E. coli, S. epidermidis, S. aureus, S. pneumoniae, P. aeruginosa, and C. albicans). It can be delivered either as a prophylactic measure (for uninfected catheters) or therapeutic treatment (for already-colonized catheters). Crucially, the kill rate exceeds the 99.99% rate required by FDA for an antimicrobial claim.

Q. What are your focus areas?

The technology is translatable to several markets, but we will first focus on peritoneal dialysis (“PD”). This initial market was strategically chosen for many reasons, one being the recent Advancing American Kidney Care Initiative to significantly increase home treatment options for dialysis patients. Historically, nephrologists and patients have been apprehensive about in-home therapies because of infection concerns, despite the strong evidence suggesting that PD patients have a better quality of life. In addition, there is significant per patient savings when dialysis is conducted at home and not in the center. Our technology removes this barrier of fear and provides confidence to both the patient and the physician that patients can safely use and stay on PD.

The second product to market will be the Foley/urinary catheter to prevent catheter-associated urinary tract (“CAUTI”) infections, the most common infection in the world.

Next, we will produce our products for endotracheal tubes and vascular catheters. The Light Line Foley™ will be available for hospital, long-term care, and home treatments. Without question, it will save patients from pain and suffering as well as millions of dollars in non-reimbursable treatments and penalty fees for hospital-associated infections.

Q. How skilled is the LLM team of experts? And how do they bring value to the company?

LLM's team has significant experience in catheter-related technology within the medical device industry. Each of the following leaders has successfully brought new products to market.

I am an IP attorney and the former founder/CEO of Catheter Connections (an infection control company acquired by Merit Medical). I have over 40 years of pharmaceutical, MedTech, IP, and commercialization experience. Robert Hitchcock, Ph.D., is the Chief Technical Officer with over 35 years of medical device expertise (co-founder of Catheter Connections), and a professor of Bioengineering at the University of Utah. Lastly, Kevin Shifrin is the Vice President of Marketing with over 25 years as a medical device executive (Hospira and C.R. Bard).

Q. About the future, where do you see LLM a couple of years from now?

LLM's technology is transformative! It will be in hospitals, long-term care centers, and homes worldwide. We envision our technology will be so commonly used in people's medical experiences that Light Line Medical will become a household name. Although we do have a roadmap to deliver products for each of the applications referred to above, we anticipate that LLM will be acquired before the last of all products is launched.

Q. What is your final message to The Silicon Review readers, your current and future clients and partners?

Light Line Medical is destined to change the way the world prevents catheter-based infections. Its impact will be monumental and with 23 issued patents and 16 pending applications, it will own the visible light space.

Vicki Farrar / CEO

For over 20 years as a practicing attorney, Vicki Farrar represented companies in the medical device and pharmaceutical fields and specialized in strategic intellectual property planning and patent infringement litigations. Subsequently, she spent 20 years working in all aspects of start-up companies.

She previously served as acting CEO and Vice President of Legal, Intellectual Property, and Regulatory Affairs at Cognetix, Inc. in Salt Lake City, developing CNS therapeutics, and as VP of Regulatory and Intellectual Property at Q Therapeutics, Inc. in Salt Lake, developing cell-based therapies. In February 2008, Vicki co-founded and was the initial CEO of Catheter Connections, Inc., a start-up specializing in medical devices to prevent hospital-acquired infections. The company was acquired by Merit Medical, Inc., a publicly traded international medical products company in February 2017, whereafter she became the CEO of Light Line Medical, after serving as a director.

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