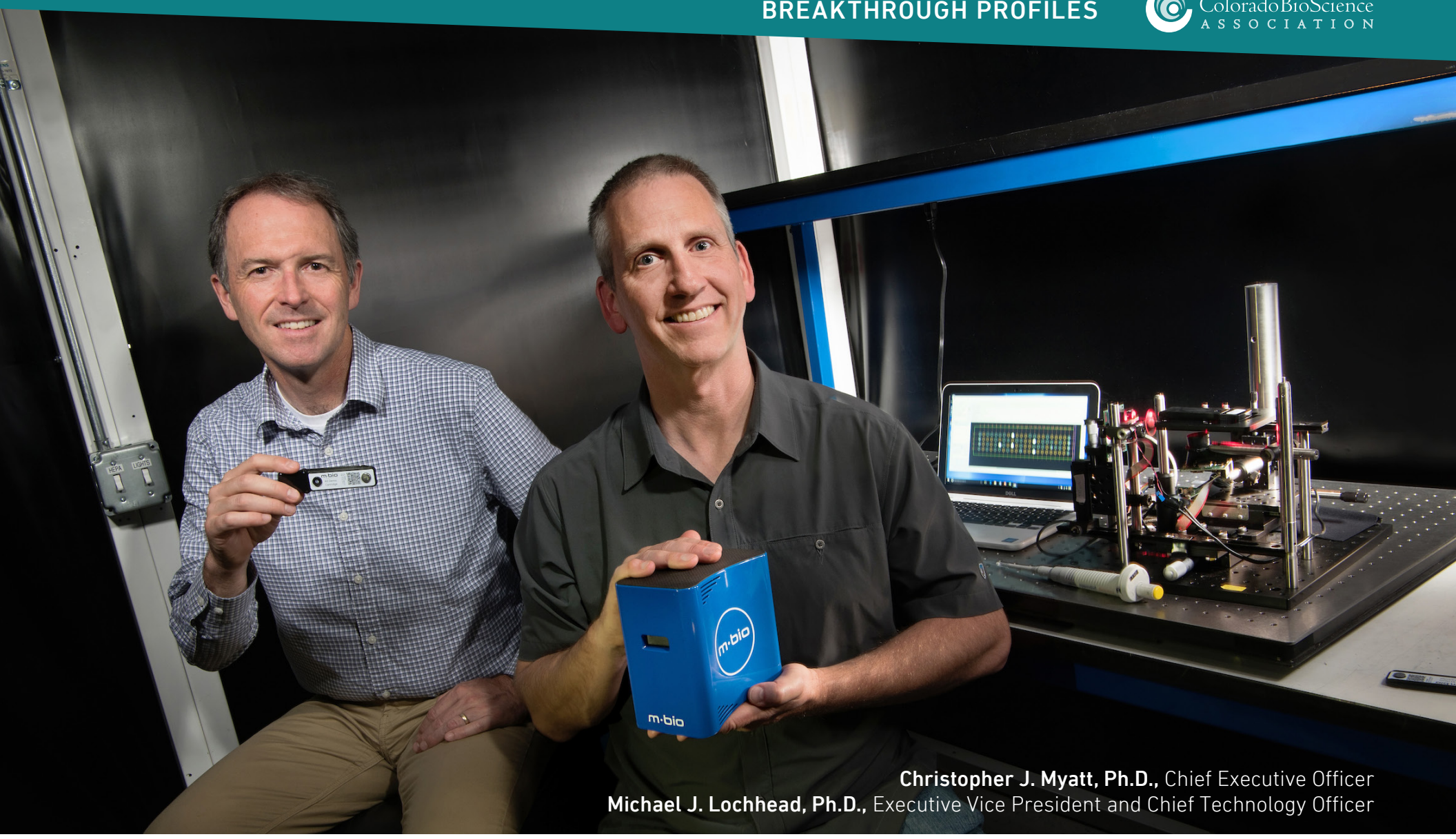

Christopher J. Myatt, Ph.D., Chief Executive Officer
Michael J. Lochhead, Ph.D., Executive Vice President and Chief Technology Officer

MBio Diagnostics to Commercialize Portable Lab Device

BOULDER COMPANY USES LIGHTDECK TECHNOLOGY FOR MOBILE DISEASE DETECTION

m·bio® DIAGNOSTICS

COMPANY SNAPSHOT

LOCATION
BOULDER
COLORADO

FOUNDED
2009

FUNDING
$35 M
EQUITY AND NON-DILUTIVE FINANCE

Chris Myatt knew he was on to something. At a conference in 2005, he met a scientist with a simple handheld prototype designed to test biological samples for anthrax. The device's laser analyzed fluid specimens on a small microscopic slide called a waveguide. It allowed for on-the-spot testing in minutes, without any need to ship samples to a lab.

Eventually Myatt and Mike Lochhead would cofound Boulder-based MBio Diagnostics around that device. But during that serendipitous encounter, the idea was just starting to materialize. Myatt had a background in laser physics. He had studied under two Nobel-Prize-winning researchers, one at the University of Colorado-Boulder and the other at the National Institute of Standards and Technolog, and was CEO of the Boulder-based fiber optics company, Precision Photonics. He could see the potential to shrink the prototype into a compact, portable and inexpensive device. A handheld device that worked like a fast-tracking lab could make a huge impact on human health in both developing and first world nations by quickly analyzing blood, urine and other fluids for disease, infection or toxin.

"I FELT CONFIDENT THAT I COULD BUILD A BUSINESS AROUND THIS DEVICE IN COLORADO BECAUSE I KNEW I COULD FIND THE TALENT HERE IN LASER INSTRUMENTATION, BIOTECH AND DIAGNOSTICS," SAID MYATT.

Precision Photonics licensed the technology and began exploring applications beyond anthrax testing. But one obstacle loomed large based on how the device works. It has two main parts: a portable box that contains both a tiny digital camera and a DVD laser, and a slim cartridge-like waveguide that fits into a slot in the box.

The waveguide directs laser light so that it illuminates the bottom of a microscopic channel that gets filled with a tiny amount of fluid. The floor of the channel is polka-dotted with a grid of spots, each one made of a different chemical compound meant to snag a unique protein that may be floating in the fluid. Those proteins indicate the presence of disease or infection, and when one gets trapped, the spot glows from the laser light and can be imaged by the camera.

One problem—any slight shift in the angle of the laser light entering the waveguide made analysis unreliable. Misalignments were almost inevitable as the device was being designed for use in remote village clinics in developing countries, where it would be jostled and perhaps dropped, and where the nearest repair shop might be hundreds of miles away.

But then one of the company's researchers, Kevin Moll, came up with a solution. He added a tiny lens to the waveguide that eliminated the need for precise alignment.

"Our core intellectual property is around how to eliminate the alignment issue," said Mike Lochhead, cofounder and CTO of MBio Diagnostics.

Moll had done post-doctoral research in atomic physics at the University of Colorado-Boulder. It was his expertise, along with that of other highly talented people, who expertly refined the original prototype and created the LightDeck Technology the company's platform was built around.

"From a business standpoint, Colorado is very big in the laser science arena," said Myatt. "I've hired eight PhD-level employees out of Nobel-Prize-winning labs who are seriously smart technical folks," said Myatt. "And I've turned away 50 others."

MBio Diagnostics is on the verge of commercializing test products with industrial partners. The company has active programs around the world exploring how the LightDeck Technology platform can find early indicators of malaria, tuberculosis, and sepsis. And it can also be used to analyze water for toxins or test milk for antibiotic residues at dairy processing facilities.

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