

# UPMC, CMU seeing benefits of cooperation on eye research

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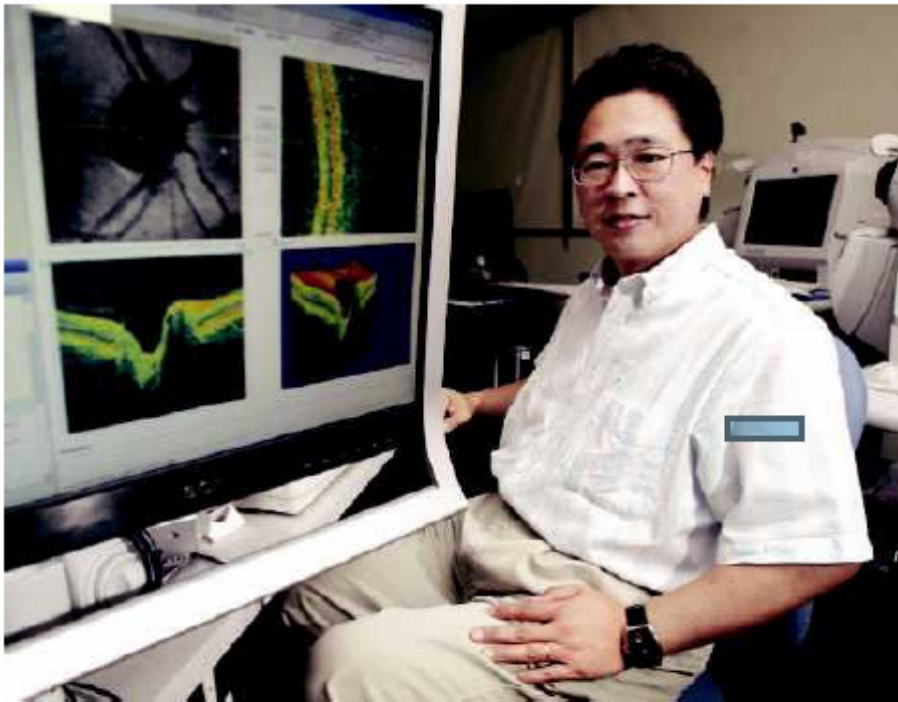
In a media event that drew national attention, University of Pittsburgh Medical Center President Jeffrey Romoff announced a \$400 million partnership with IBM in the spring of 2005 that aimed to create spin-off businesses and fuel the transformation of the region's economy.

However, two years later, the deal has yet to live up to the hype, owing partly to the difficulty of such large-scale alliances.

UPMC needed only to look up Fifth Avenue a few blocks, where a quiet collaboration with Oakland neighbor Carnegie Mellon University is already showing signs of success after only nine months.

In an announcement last November that attracted little attention, UPMC committed \$10 million over five years to leverage CMU's strengths in computer science and robotics with the health system's extensive medical know-how to improve patient care. Although a formal presentation to UPMC isn't due until fall, CMU's computer science department is making significant progress on a jointly developed technology that's helping UPMC doctors find ways to better diagnose and track eye disease, technology that could spawn new businesses and applications in areas like mammography.

Using a laser beam similar to the one that plays a compact disc, eye doctors measure the depth of the retina with a device that produces sliced images, similar to a CT or MRI scan, according to Dr. Hiroshi



JOE WOLICK

Hiroshi Ishikawa, director of the Ocular Imaging Center at the UPMC Eye Center, uses laser beams to measure changes in the retina, which can indicate eye diseases.

Ishikawa, director of UPMC's Ocular Imaging Center. Changes in the eye's retina, or "projection screen," can indicate diseases like glaucoma and macular degeneration.

With current technology, doctors cannot easily isolate one or two slices of the image, which help identify disease, said Ishikawa, who previously programmed

video games in his native Japan before enrolling in medical school.

Now, CMU computer science professor Gary Miller and his colleagues have found a way to more accurately isolate parts of these images, which may allow doctors to better diagnose and track eye disease.

"The first idea was to put out something

simple," said Miller, adding that the technology may have a wide variety of medical applications. "If we can help the clinician — that's the big thing."

Technology breakthroughs, like the software being developed by Miller, can also spawn new business, but he said it's still too early to say what form it will take.

"Finding and hitting home runs and taking the technology into the real world isn't an easy thing," said Peter Lee, head of the computer science department at CMU. "I think there's some luck involved. If it all pans out, we'll have a nice win."

UPMC spokeswoman Wendy Zellner said the UPMC/CMU collaboration has produced "promising research that's applicable to the health care field," but said no one from UPMC would comment further.

Investing in early stage technologies can take as many as seven years to realize returns, according to Michael Stubler, president of the Pittsburgh Venture Capital Association. But Lee said the UPMC/CMU agreement envisions a shorter time to pay off — three to five years.

Venture capitalists look for a success rate of 10 percent; Lee said UPMC and CMU would like to better those odds to one in four or five.

"When you look at early stage investing, it has the highest financial returns as compared to other alternative investments," Stubler said. "That said, it's also risky."