NJIT and UMDNJ license personal tonometer technology for innovative glaucoma testing

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NJIT and UMDNJ have executed a license agreement with The Incubation Factory, St. Louis, MO, covering their personal tonometer technology on which a patent is pending. The tonometer was developed by a research team led by NJIT Professor Gordon Thomas, PhD, and Robert Fechtner, MD, director of the glaucoma division at UMDNJ. NJIT Associate Professor Tara Alvarez was a member of the research team.

"We are excited that this innovative technique will generate more accurate eye pressure readings to help doctors monitor glaucoma and thus improve the prevention of blindness," Thomas noted.

Vince Smeraglia, UMDNJ Director of Patents and Licensing, said "This is a terrific example of a prominent engineer like Dr. Thomas collaborating closely with Dr. Fechtner, an experienced clinician, to address an unmet medical need for less painful testing and the delivery of significantly faster test results."

Glaucoma, a group of diseases for which 119 million Americans are at risk, is marked by increased eye pressure - known as intra-ocular pressure, which damages the optic nerve. Unless caught and treated, this increased eye pressure can cause vision impairment and ultimately lead to blindness.

Patients at risk for glaucoma generally have their eye pressure tested every three or four months by medical personnel, but recent studies have shown that peak eye pressure occurs during the nocturnal period. Since most ophthalmologist visits occur during the day, it has been shown that 67 percent of patients tested are likely to be incorrectly diagnosed.

The current preferred method of obtaining eye pressure involves a licensed medical practitioner using a specialized instrument to touch the patient's cornea directly through the open eyelid, which may cause discomfort or pain and requires that antibiotic medications be administrated just prior to each exam. The NJIT/UMDNJ tonometer allows for testing through the closed eyelid and thus can be done outside a normal medical setting such as in a pharmacy operated patient care clinic or even at home.

Research shows that those most at risk for glaucoma experience wide variations in their eye pressure throughout the day; these individuals are at a higher risk for disease progression. NJIT/UMDNJ's tonometer would allow a glaucoma patient to check his/her own eye pressure and report readings to the ophthalmologist in real time via the internet.

"The personal tonometer holds great potential in helping glaucoma patients better manage their condition," said Incubation Factory President Randy Delkus, "The Incubation Factory is excited to collaborate with NJIT and UMDNJ to commercialize this technology."

Thomas, who teaches in the department of physics at NJIT, has been awarded 13 patents and has published more than 150 articles in peer-reviewed journals. His research interests include new sensors with human applications, such as preventing blindness and brain injury and protecting perimeter security. He is a Fellow of the American Physical Society and was a member of the technical staff at Bell Laboratories from 1972-1999, both when it was as a division of AT&T and later as a

division of Lucent Technologies.

Fechtner directs the Glaucoma Diagnostic Laboratory at UMDNJ-New Jersey Medical School, which helps provide patients and physicians with the latest imaging and laser technologies, including ultrasound biomicroscopy (UBM), confocal scanning topography (Heidelberg Retina Tomograph and Topographic Scanning System [TopSS]), scanning laser polarimetry (GDx), a simultaneous stereo camera, and various psychophysical tools.

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