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Ron Hayes: Professor of neuroscience, University of Florida McKnight Brain Institute

Research: Leading the Battle Against Brain Injury
by Diane Chun

Ron Hayes defines himself in many ways: philosopher, scientist, warrior in the battle against crippling brain injuries.

As a student of classical languages, he once pictured himself teaching philosophy on a small college campus. Today, he is director of the Center for Traumatic Brain Injury Studies at the University of Florida. He is comfortable in the role.

"I've had the opportunity in my research lifetime to make a measurable improvement in the outcome of patients with severe brain injuries," Hayes says. "Most of us never have that chance to make a real difference."

Hayes, 58, leads a research team that is developing a simple blood test to quickly gauge the severity of a head injury — whether it's a soldier wounded on the battlefield or a young soccer player who takes a rough blow to the head.

"Traumatic brain injury is a scandalously ignored health problem," Hayes reports. "It's the biggest killer of kids. This research is where homeland defense provides a service for the soccer mom."

It's an example of what's coming to be called personalized medicine. Hayes has joined with UF researchers Nancy Denslow and Kevin Wang to create a biotechnology spin-off called Diamonion Diagnostics — named after the inner voice that always spoke the truth to Socrates.

The team's goal is to develop a lightweight, portable testing kit that would let a medic on the battlefield or a doctor in the emergency room take a pinprick sample of blood and diagnose the extent of a head injury. The test would quickly detect biochemical markers that cells release into the bloodstream after an injury.

Hayes and his team aim to have the diagnostic kit on the market as quickly as possible. Their goal is to have it ready for testing in two or three years.

Hayes said he can foresee a time in the near future when today's baby boomers will routinely get a "brain wellness test" as part of an annual physical.

"When you go in for a physical, along with the other routine blood tests you'll have a blood test that looks at brain function," he said. "If the test shows you have precursors of age-related problems (Alzheimer's disease or memory loss), you could respond in a timely fashion."