

FSU College of Medicine

Miracle drug?



FSU medical school researcher, Jake VanLandingham is leading an international team to try to secure a patent and funding for a drug to treat concussions. GLENN BEIL/DEMOCRAT

VanLandingham creates nasal spray to treat concussions

By Doug Blackburn
Democrat senior writer

Getting mugged may have been the best thing that ever happened to Jacob VanLandingham.

It changed his life, that much is certain. The head injury he sustained also inspired him to develop a drug to treat concussions, an invention that has the Florida State University professor and researcher knocking on the door of what could end up being the next big thing.

VanLandingham has created what he hopes will be the first Food and Drug Administration-ap-

proved medicine for treating mild traumatic brain injuries such as concussions.

"It's an unmet need," the Gadsden County native said. "We're trying to take people out of the dark."

But first there's the back story, how VanLandingham evolved from a career as a physical therapist into a neuroscientist fascinated with brain injuries.

It starts in Gainesville in the summer of 1995, when VanLandingham was helping his older brother move into an apartment so he could



In 2011, FSU receiver Kenny Shaw suffered a concussion after a devastating hit. DEMOCRAT FILES



ONLINE
See video about the research at Tallahassee.com/VanLandingham

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Concussion

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begin medical school. VanLandingham was blind-sided by a vagrant, knocked to the ground and struck the back of his head on the curb.

His head hurt — a lot. But he didn't think anything was too wrong until the next day when he realized he was woozy.

An emergency room doctor discovered VanLandingham's brain was bleeding. He had suffered a concussion, and for the next 19 months he coped with short-term amnesia. Eighteen years later, he is still aware that his sense of smell has been dulled.

VanLandingham believes that if there had been a nasal spray available similar to what he has developed, a product to quickly reduce swelling in the brain, his recovery time could have been shortened immeasurably.

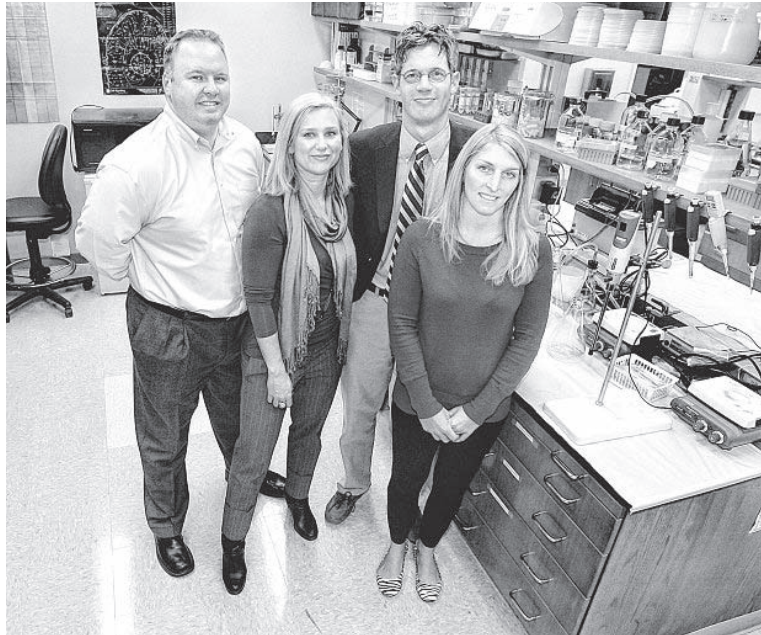
His drug, Prevasol, contains the female hormone progesterone. It is almost two years in the making at this point, still 90 days from earning a patent, VanLandingham said.

While it will be at least three years, and more likely five, before VanLandingham's product will be readily available — and that's assuming all goes well along the way during clinical trials and investors continue to step up — a lot has happened already.

FSU's Office of Research and Economic Development has assisted VanLandingham from early on, providing advice and seed money that was essential for creating Prevacus, the company responsible for the drug. VanLandingham also has assembled a team that includes a CFO based in West Palm Beach, a consultant with ties to pro football's Pittsburgh Steelers and a production facility in China.

"It's a process that's fairly well understood. Whether you have the results to advance to the next step remains to be seen," John Fraser, assistant vice president for research and economic development at FSU, said. "It's pretty clear from the time and amount of money you need, Jake is at the beginning. I think everybody recognizes that.

"What's the potential here? Is it a new Band-Aid, or is it something that might be more significant?



From left to right, Jeff Johnson, Beth Corson, Jake VanLandingham and Megan Deane. GLENN BEIL/DEMOCRAT

It's something we think could be more significant," Fraser added.

He is speaking from experience. FSU has signed 36 spinoff licenses during the past 14 years, including the one responsible for chemistry professor Robert Holton's Taxol, the breast-cancer drug that produced hundreds of millions of dollars for both FSU and Holton.

It's way too soon to know if Prevasol is the next Taxol, but Scott Burkhart believes there's a bank vault's worth of potential in what VanLandingham has developed. Burkhart, now a consultant with Prevacus, is doing a fellowship in concussion treatment at the Pittsburgh Medical Center, which has direct ties to the Steelers (Burkhart is scheduled to join Tallahassee Orthopedic Clinic in August).

"Jake is a smart and savvy businessman. A lot of smart scientists are not very smart businessmen. Jake brings both," Burkhart said. "The NFL is a billion-dollar industry. I think they would be ecstatic to get their hands on this medicine, not to mention the Department of Defense and every emergency room in the country. We're talking about something pretty tremendous if it takes off."

VanLandingham, eager for clinical patient trials to get under way, sees unlimited markets for his drug, from youth sports programs to the military to aging Americans who are more prone to falls that can cause concussions.

It could even be used as a preventative treatment, prior to participating in contact sports, he said. Traumatic brain injuries are a big business in the United States. The Centers for Disease Control and Prevention reports that 1.7 million Americans sustain a TBI every year, and 75 percent of all TBIs are concussions or other mild brain injuries. Treating them is a multi-billion dollar industry.

Dr. Hugh VanLandingham, a family physician in Tallahassee who is Jacob's senior by 18 months, is the brother who was beginning medical school when VanLandingham suffered his life-changing injury. He marvels at how his brother, who was assistant director of the Brain Research Laboratory at Emory University in Atlanta for two years before joining FSU's College of Medicine in 2006, is following a dream that began with a fluke mugging.

"It was a complete turning point in his life, and changed his direction," Hugh said. "The truth is, with his injury he got quite lucky. He healed. He could have been a lot worse. A lot of folks don't fare as well.

"What he's doing could change health care as we know it," Hugh VanLandingham added. "It would be great to have a medicine to treat concussions so they don't end up the way they do now. I'm excited as a practitioner and a brother."