

**County Profile: Wake County
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Computer games are serious business.

Casual games, such as Gears of War, Grand Theft Auto 4 and Halo 2, are leaping off store shelves. Serious games (virtual simulations) are being created for training everyone from surgeons to astronauts.

Wake County will soon be the hub for the engines that run this powerful industry if Wayne Watkins, project manager for Wake County Economic Development (ED), and Michael Young, co-director of NC State University's Digital Games Research Center (DGRC), have their way. Together, their two agencies have created a unique marketing partnership designed to attract gaming companies to Wake County from around the world.

"NC State University offers both research and teaching in the field of gaming," Young says. "It has a unique combination of strengths in both areas. "Many universities may offer a focus of teaching without research. Others do research without graduate and undergraduate education. We are recognized for our strength in both areas."

Similarly the ED has an expertise in marketing and economic development. "It is a really great fit," Young says. "The initiative evolved naturally." While computer gaming can take many forms, Watkins' goal is very specific. "My absolute goal is to make Wake County the East Coast hub for gaming," he says. And Wake County is well under way to doing just that. The Triangle is home to dozens of prominent gaming companies, and several, such as Epic Games, Destineer and Red Storm Entertainment, already have a major presence in Wake County.

To fully appreciate Wake County's role in this movement, it is important to understand a bit about the industry itself. In general, gaming can be divided into two categories: casual and serious. Casual games are used for purely entertainment purposes. Serious games, on the other hand, are virtual tools used to provide realistic environments to train everyone from engineers to Marines.

At a recent technology conference, representatives from WakeMed illustrated how serious games can be used to recreate a field hospital in Iraq – and how patients' blood pressure, temperature and other factors will react to certain situations and interventions. "It was intensely realistic," Watkins says. "Compare that to learning something by reading a case study in a text book and you can clearly see the advantages." Similarly,

serious games are finding their way into education from the kindergarten through the college level – and beyond.

“Kids now are digital natives,” Watkins says. “They are more proficient in middle school than I am with a post-graduate degree.” They are having a major effect on the national economy too. There is a multi-billion dollar market for casual games alone. “It is outstripping the income from the film industry,” Watkins says. “The media can’t keep up.” Watkins says.

Wake County is a perfect location for companies to create both game engines (the software that powers the games) and serious games:

- Access to three world-renowned research universities — in addition to the DGRC at NC State, UNC-Chapel Hill has a world-class graphics capability and Duke University is becoming a leader in artificial intelligence
- An excellent community college with a world-class simulation lab, as well as a program that allows students to segue from an associate’s degree into the gaming curricula at NC State University
- A much lower cost of living than other technology hubs such as San Francisco or Boston
- A density of existing clusters. “We are not a one-horse town,” Watkins says. “There are lots of options for people looking for a job.”

The companies also feed off each other. The advanced training products of Virtual Heroes of Morrisville run off a gaming engine developed by Epic Games of Cary. The DGRC also partners with gaming studios in pursuit of external funding, such as from National Science Foundation grants.

And Epic Games is thriving. Its game engine, Unreal Technology, is under the hood of some of the most visually intensive and interactive computer and console games on the market today – from action games to military simulations. It provides an extreme amount of detail without taxing the processor.

It has won numerous awards, including Best Engine from Game Developer Magazine (2005-2007), Best Technology, Game Developer Choice Awards (2007) and Outstanding Achievement in Visual Engineering from the AIAS Interactive.

Epic Games also produces Gears of War, a casual game that has sold 4.5 million copies nationwide and won such awards as Best Developer for Xbox 360 by IGN Entertainment, Best Developer of the Year from Official Xbox Magazine and Best Studio from Spike TV.

Epic Games Vice President Mike Reins says the main reason Epic chose Wake County was quality of life. “We like the area,” he explains. “It’s affordable for young families. The weather is good. The decision was mostly about quality of life, amenities and real estate.”

Virtual Heroes of Morrisville has adapted the Unreal Engine for use in its serious game simulations. Located in Cary until a fire forced it to move in March 2007, Virtual Heroes is the only company in the area purely focused on using game technology for training and education. Most of its revenue comes from health care and federal systems, as well as commercial training for marquis customers such as Hilton Hotel Corp.

Duke Medical Center and others use its product, HumanSim, to allow health care professionals to sharpen their assessment and decision-making skills without risk to patients, while still in a realistic and challenging environment.

Another product, America's Army, is used for three purposes: training and education for military personnel, mission planning and rehearsal for the special operations community and strategic marketing about career opportunities in the military. Each day, more than 1.2 million game missions are played around the world over the Internet. That is a total of 1.34 billion missions played to date.

"We use Virtual Heroes to train our real heroes," says founder and CEO Jerry Heneghan. "Every day, first responders, military professionals, educators, health care providers and corporations turn to us for efficiency and a return on investment."

Heneghan says there are many reasons Virtual Heroes originally chose Wake County, including a confluence of leading educational institutions, a large amount of talented and enthusiastic young people, accessibility of Ph.D. level researchers and access to premier health care institutions.

As with Epic Games, quality of life was an important factor. "We routinely bring people in from the major motion picture gaming industries of California," he says. "They work for Pixar and Disney and want to have the quality of life where they can raise families and be with professional partners. North Carolina provides that for them."