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## Jim Geduldick & Gearing Up For a VR World

Today, when you approach art on a wall printed at 24" x 36", the impact feels impressive, possibly even larger than life. But imagine an end to frames. Imagine photography and cinema experiences that wholly fill your vision and surround you in complete 360-degree immersion. This is the promise and, increasingly, the reality of virtual reality.

Not since the move from film to digital has the video industry stood at such a significant divide. Virtual reality (VR) and its real/computer-generated sibling augmented reality (AR) represent the next wave in visual media, and director/cinematographer Jim Geduldick stands in its vanguard. As a director, cinematographer, consultant and owner of Wairua Studios – sporting a unique pedigree of having worked for GoPro™ and Apple® – Jim tackles VR projects everywhere from action sports arenas to thundering dance music concerts. No single job stands out as the quintessential example of his work. Rather, it's the VR work itself that makes Jim special.

Ready or not, VR is shaking up the world of high-definition media. If you work in photo or video professionally, or even if you approach the space as a talented amateur, pay attention. Jim Geduldick may be the authority you wish you'd heeded five years from now.



## Shooting and Showing the New World

Practically anyone can experience at least rudimentary VR today. Those 360-degree video clips on social media and video streaming websites? Simply pull them up on any PC or smartphone. For stereoscopic (3D) VR, slap a headset on your face. The barrier to experiencing today's VR media has become remarkably low. The same is increasingly true of VR capture, at least at the simplest levels.

"You don't really need much to get your feet wet," says Jim. "There are tons of apps that allow you to capture 360 panoramic images. You can stand in one spot and become your own nodal head. It may be a little shaky, but there are apps from major software companies and independent developers out there that enable 360 image capture right from your mobile device."

The vast majority of virtual reality shooters will be handling multi-camera, or at least multi-sensor, setups. Thus, compared to single-sensor photography, storage needs will inevitably balloon. This applies as much to a multi-unit action camera rig as to professional VR systems. Single-camera jobs that amassed gigabytes may require terabytes in this new, immersive world. Large, maximum resolution projects involving many such VR cameras might even scale into the petabytes.



The old image boundaries of traditional video break down in the world of VR. 4K is only a starting point in many cases; 8K and even 16K streams are increasingly common. Obviously, this impacts everything from gear selection (cameras, storage solutions, connectivity, etc.) to output type, as when weighing the trade-offs between image quality and ability to live-stream. Naturally, the level of sophistication and power that must accompany such footage on the special effects and post-production sides is substantial, which will further increase the demands on storage capacity and performance.

According to Jim, VR and AR remain “pretty complex.” The majority of users, including experienced photo and video professionals, don’t even know how to take a 360-degree image and post it on social media and other online platforms. He strongly advises learning the basics on a cheap, basic camera. Not surprisingly, the range of image quality from low- to high-end can be vast, but the overall tide level of quality lifts across the board with each successive product generation. Learners would be wise to pick a consumer camera, carry it around, and experiment in as many situations as possible.

“Just like my smartphone, I always have some kind of 360 capture device with me,” Jim says. “Nine times out of ten, it’s something small and capable. I know it’s kind of nerdy of me to always have these things, but with your smartphone or other device you have on you, it’s really easy to show your content to people that have no idea what virtual reality is. Start making converts and fans while building your expertise.



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“Despite that advice, Jim urges first-timers not to jump into a camera purchase immediately. Instead, he counsels people to watch and experience as much VR and AR as possible. Don’t just get educated. Pay attention to how brands are already leveraging these technologies and what kinds of people they’re hiring to build that content. See what you think works and fails. Even keep a journal or spreadsheet. Begin to establish ideas in your mind about what you’d like to achieve, and then find a camera to help make it happen.



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## Where Storage Meets VR

Jim Geduldick isn't looking to pigeon-hole his talents. The cinematographer creates VR projects in venues ranging from music concerts to sports events to his own studio. And just as with traditional digital photography and cinematography, the range of equipment needed, including storage, varies according to the job's environment and production demands. Everything he does and selects is decided on a per-project basis, either buying or renting whatever is necessary to complete the requisite hardware ecosystem.

"I need a pretty diverse set of reliable tools for reliable storage," says Jim. "At times, I can't have a rack-mounted system like a G-RACK™ 12 like I would at the studio. Sometimes I have to run with the barest minimum, but, no matter what, I'm at least traveling with a bunch of Evolution Series (ev) drives on me, because those are going to get used everywhere and on everything. If I go out to some super-remote place, for example, I'm likely to bring more – X number of ev drives, X number of G-RAID™ dual bay drives, and probably at least one portable G-SPEED™ Shuttle XL in a Pelican™ case that could be dedicated to the DIT I hire."



G-SPEED™ Shuttle XL with  
ev Series Bay Adapters





Location requires addressing a wide range of variables, from power draw to weight restrictions on smaller, regional aircraft. Jim notes that one of the reasons he favors G-Technology™ is the breadth of product line, which allows him to consider such factors alongside the high capacity and reliability he needs for VR-type work.

"I usually have at least two to three backups of each master drive," he says. "It may sound excessive, but if you've been working in production and visual effects, and these kinds of production environments long enough, you know that you can have issues. The good thing, though, is that I have been working with G-Technology G-RAID dual bay drives and other drives since 2004 and they have been very reliable.

"How those drives can take a beating," he adds, "especially in the environments I'm working in, is a real testament to the quality and reliability of G-Technology products. Because I do beat up on things. I could drop a pack off the side of a mountain – not on purpose, but it does happen. I've broken lots of cameras and computers and equipment over the years, so being able to have things like the ev Series All-Terrain Case (ATC) is great. They let me take stacks of small, portable drives with me and know that I won't run into issues. Even if the airline loses my luggage, I have all the shot media right beside me in a backpack filled with a G-RAID and some ev drives."



G-DRIVE™ ev ATC  
with Thunderbolt™



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## Ready for the Future

With VR, the tools may change, but the workflow and shooting methods remain familiar. Jim Geduldick might go through hours, even days, of site set-up and then end up with a project coming down to five minutes of run-and-gun shooting. Clients can still expect dailies and proofs in timetables reflecting almost irrational optimism. Especially with the higher data loads of VR, there is no room for slow transfers or the risk of a disk dying. Again, this is why Jim makes sure to load and backup his projects with G-Technology storage, which delivers ultra-fast throughput via a Thunderbolt™ port and dependability robust enough to draw legions of devoted creative professionals around the world.

**"I just like making cool stuff, and I can't do that without having the right storage, G-Technology storage, helping to make it all possible."**

Jim Geduldick



*G-RAID™ with Thunderbolt™*



Virtual reality has yet to go fully mainstream. A lot of artists are enjoying experimenting within this new world that seems unbounded by rules or fences. With nearly all of the public's VR attention focusing on consumer applications, the role of VR for business remains largely unexplored. Imagine what improvements VR might offer for employee training. Imagine creating virtual/augmented environments, even entire landscapes based on real captured locations, in which people can meet and interact. Such offerings are just around the corner, waiting for artists and content creators to fill the emerging need.

"Like everything else, there will be ups and downs with VR and AR," says Jim Geduldick. "But I don't think it's going away. In fact, I'm betting on it, and that's obviously why I've made some career changes, to focus on helping develop that technology and bring talented people together to produce amazing content. Because, at the end of the day, that's my goal: I just like making cool stuff, and I can't do that without having the right storage, G-Technology storage, helping to make it all possible."

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