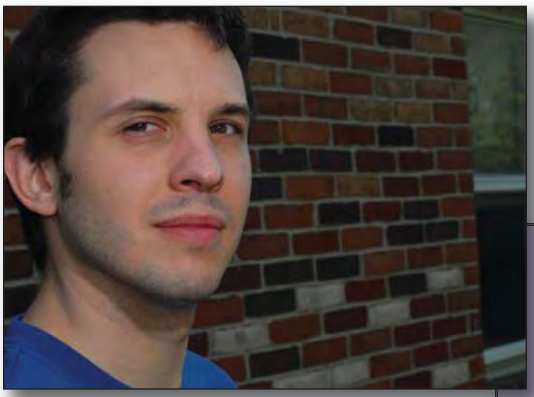

Getting from Here to There:
An Interview with Tronster Hartley, Senior Programmer at Firaxis Games

Tronster Hartley is a senior programmer at Firaxis Games, the video game development company best known for its Civilization series, as well as president of Geek House Games. In this interview with Crossroads, he explains how his career path was influenced by not only his computer science education, but also his willingness to experiment with game-making and interact with new people on his own time.

Crossroads: Can you explain what the difference is between your two jobs, Firaxis and Geek House Games?

Tronster Hartley: Sure. Firaxis Games is my day job. I work it Monday through Friday, roughly 40 hours a week, but during crunch time [when extreme overtime occurs in order for the company to meet its deadline] a little bit more. Geek House Games is more of a personal passion. On nights and weekends, myself along with other professionals, students, and indies [independent game developers] come together to work on a game that will go into realms that we might not have a chance to explore in our day-to-day activities.

Crossroads: Can you talk a little bit about why having something like Geek House Games is important, not just to you personally, but in terms of your career development?

TH: Before I even started working full-time in the game industry, I was always fascinated by games. I loved playing them. I would tinker around and make them in college during spring break.

After working a computer programming-based job in a few business sectors, I realized my passion for games had not been diminishing. I really missed doing game projects that were structured and organized and I wanted something that would hold me accountable to finishing a game.

My hard drive had half a dozen or a dozen projects that were started but never completed. I realized in order to hold myself accountable, it was important to establish a business entity and strive to make some sort of goal with milestones and deadlines that would force me to finish a game.

Once every year, I intend to submit a game to the IGF [Independent Games Festival, an annual competition that is well-recognized in the video game development industry for introducing experimental and innovative concepts]. Making games in my spare time, even before working full time for a AAA studio, actually helped get me a leg up when I started interviewing at some of the game studios.

One thing I tell students whenever I talk to them about the game industry is that even if they don't have a job lined up or an internship lined up, the best thing they can do for their careers is to start making games right now. If the best prospect for them is to create a business entity, do that. If they are disciplined enough to make games on their own time and see it through from start to finish, then I recommend doing that—whatever works best for them.

Now that I'm full-time in the game industry, I found that I am most valuable if I specialize in a particular area of programming. For me it's been user interfaces. And while this is my focus, I still have a passion to do a bit more with computer graphics, game design, and pixel shaders. Every now and again, I even get the urge to just to make a well-written system for playing sounds.

Since I've become very specialized in user interface, I put most of my energy into it during my day job. Occasionally I will get opportunities to do more in art or design; I welcome those opportunities. But when there are no opportunities outside of UI, during my day job, I can always satisfy my other interests in what I do at Geek House Games.

Crossroads: I think something a lot of people don't realize, especially when they are new to the workforce, is that they don't have to be beholden to the thing that pays their bills 100 percent completely. That really is a difficult thing for many people.

TH: Very much so. Before breaking into the game industry—my first full-time job was working on a AAA title at BreakAway Games—I had a job at a start-up that was creating and supporting backup software.

Early on in my life I set some financial goals. I wanted to be making six figures by the time I was 30, and I was making well beyond that on contractor rates, but it didn't make me happy.

When the opportunity arose at BreakAway, even though the salary was a third of what I was making, my quality of life was going to increase. At BreakAway, when I was coming out of meetings, we were talking about where we'd be placing Tiberium on a map [in the game *Command & Conquer 3*: *Tiberium Wars*] rather than what files had to be restored on someone's hard drive.

Even crunching is different. I welcome crunching at a game company. Crunching happens at every other type of job I've been at, but I don't think there's been a single case, outside of the game industry, where I can say I've had a good experience from doing a crunch.

Crossroads: Just to back up, BreakAway Games is a studio that does serious games, or games with objectives other than entertainment, as well as AAA titles, right?

TH: Right. BreakAway is diversified. At least when I was there, there was an entertainment section and a serious games section. They have some of the most cutting-edge serious games technology. The people who built that technology were able to transfer their skill sets very well into the AAA space.

In the past, BreakAway had done a few contracts with EA to put out an expansion to *Battle for Middle Earth*, an extension, and when I came on board, I was hired to do UI work on *Command & Conquer 3*: *Kane's Wrath*.

Crossroads: What is your educational background? I know you went to Ohio Wesleyan University.

TH: Yes. Before I talk about my degree, I'm going to take you way far back because it explains how and when I got interested in programming.

I've always had long-term goals on my mind. From kindergarten, I was going to be a chef, until third grade when I learned how to do AppleSoft Basic, and from third grade on, I realized I wanted to make games. This is way back in the early 1980s, and I realized the only way I was going to make games was to get proficient with a computer, so I knew I would need to go for a CS degree. All through middle school and high school, that was the target.

OWU had a very good program. I think there were about seven people per class. The entire school has about 2,000 people on campus, so it was bigger than my high school, but still small enough to get the personal attention that I was looking for.

Crossroads: Did you find you were naturally adept at learning computing and programming before you started at Wesleyan?

TH: I did, but I was a bit of an ass in high school. I'm a big geek; I think one of the problems with geeks in general, myself included, is that we become very specialized in technology early on and it can breed a bit of arrogance. My arrogance was the biggest issue for me, especially amongst my friends. I would be taking an advanced placement computer science course in Pascal and I would be working with various libraries the teachers were not familiar with. I actually had an ASCii, 3D, rotating cube in a program for a help screen, when all my teacher wanted was a line of text along the lines of "This will count cards and score them for a hand of bridge."

I was thirsting to do more with what I knew, and it did cause a lot of conflicts in high school. But once college started, I was quickly put in my place. A lot of it had to do with the curriculum and programming competitions. There was an ACM programming competition where OWU represented with two teams. It was a fantastic experience as the problems were challenging, showing me how much I still needed to learn. One of our teams placed; my team did not.

Crossroads: You were saying you started at Ohio Wesleyan and it had a small class size and you got a lot of personal attention. Talk a little bit more about what you studied there.

TH: Because of my AP scores in high school, I started immediately in the Assembly class. It involved a lot of low-level "register" work, which required an existing knowledge of programming. So my class was filled with sophomores and one other student who also jumped ahead via AP scores. Ironically, that student was the one who had hired me for the backup software job.

The course was hard, due to so many factors. It had a long time slot, started at 8 a.m., and involved looking at low-level code on a black-and-white LCD that was projected via an overhead projector in a dark room. I have this one memory of Dr. Zaring, our professor, showing a difficult concept via the computer, and then flipping on the lights. The six other people in the class were all asleep, heads on desks, except me. I was lucky enough to have had a Mountain Dew in one hand and a Surge in the other, double-fisting caffeine the whole time. It was hard picking up the concepts, in this environment, but the small class size and availability of Dr. Zaring made it possible.

In my senior year I had finished a lot of the courses that were required to graduate, and instead, I was taking a lot more interesting courses, such as compilers and a computer graphics study. I was having a lot more fun learning concepts that I knew would be more immediately applicable to the projects I wanted to do when I graduated.

I also became the president of the student chapter of the ACM at Ohio Wesleyan. At that time, not many people on campus knew about the ACM. We continued that year to do all the stuff that had been done in the previous years, mostly computer competitions. But additionally, I wanted to do things that would make the ACM more visible.

Once a month, we would have an open, campus-wide "computer" movie night. One night we'd show *Tron* and another night we would show *Lawnmower Man* or *War Games* in the student areas. I see the ACM as being about computers and culture and the fact that we cannot live without computers today, and those types of movies helped bridge the gap between those of us who loved computers and those who felt they were a necessary evil. Now this is in the late 1990s, and today our society is even more reliant on them, but at that time, I felt it was key for the rest of the campus to understand how important computers were becoming.

Crossroads: So, you used movies as a hook into showing other people how this field could actually be applicable in their everyday entertainment lives, as well as the deep backchannel stuff that goes on.

TH: Right. It was one of two hooks that we tried, but it was the only successful one. The other hook was shut down by the administration. That year, for Valentine's Day we decided to have a match-making service. All the students submitted ballots and then we had a computer algorithm—one of the guys had figured out a matching system—and paired up students on campus. If people wanted to act on it they could, but they didn't have to. But some of the questions were a little cheeky, like, "How far is too far on the first date?" Even though the language wasn't crude, the dean pulled me aside and told me he was pulling the plug on our project.

There are a lot of misconceptions about what computers can and cannot do, and the people behind them.

Just today, I heard on the radio about a local college, which is offering some degree in computer security, and there was a voiceover of this woman who said, "When I nab my first hacker, I'm going to dedicate that to my sister!"

I grew up in a hacker culture, and am offended by that commercial. "Hacker" should not be synonymous with "evil person trying to commit crimes." Having misperceptions of people who use computers, what they do with computers, and being able to assess who is doing good and who is doing bad, what it means to be doing good and what it means to be doing bad—those kinds of things were important to me when I was in college leading the ACM chapter, and continue to be important to me today.

Crossroads: I can imagine that that has a lot of crossover with working in the game industry, too, this whole notion of doing good. I would think it might be complicated at a company like BreakAway, where you

were working on a violent title like *Command & Conquer 3*, but on the other hand, BreakAway does all this altruistic stuff in its serious games.

TH: Right. As games are becoming more realistic, as they're becoming better at what they're supposed to represent, the lines are becoming blurred, and I recognize that.

I loved playing the original *Doom* and the original *Quake*. But I can't play *Doom 3* because I dislike horror movies. After the first level, it freaked me out so much that I had to put it down.

Some games, such as what the U.S. Army has put together, are amazing in terms of technology, but at the same time, are a little disturbing in what they are portraying.

But I don't have a hard stance on violent video games; different games for different people. And while I don't play violent games I think for the most part those types of games are used as a scapegoat, particularly when people act out and blame their actions on a game. I do recognize that games, like movies, have the ability to evoke emotion. But neither games nor movies make a person behave outside their norm. As I understand it, studies have been performed that show while aggressive people may play "aggressive" games, aggressive games do not convert docile people into being more combative. At the most, playing violent games is a cathartic activity.

Crossroads: It's really interesting to consider the fact that if you go in to study computer science or programming, nobody would ever on that basis accuse you of having bad intentions or doing some sort of ill to the world, until it becomes clear that you intend to program video games, or that you know about hacker culture. Those things are so intertwined in one sense, in the popular culture sense, but then in the academic sense, we think of people who study computer science as being very very different, almost harmless or geeky. It's kind of funny.

TH: It is.

Crossroads: I wanted to also ask about your involvement with the International Game Developers Association (IGDA). You're the president of your local chapter, is that right?

TH: I could be considered the president, but we call the position chapter chair. It's the person with the responsibility of coordinating the rest of the board.

In 2006, when I was creating Geek House Games, I wanted to get a local IGDA chapter started in Baltimore because although there was one in Washington D.C., that's a far commute from Baltimore, particularly after a full day's work.

I knew about the IGDA from attending a few Game Developers Conferences, but I had held off because I heard through the local grapevine that there was someone else at BreakAway who was already trying to start a local chapter.

And so while I waited for it to start, I began having meetings in my house with some friends. Once a month, everyone would come over and show what games they had, whether they were board games or computer games or computer systems. Once Geek House Games started to get rolling, I realized I should just try to start to create an IGDA chapter because I didn't know if the grapevine was correct or if that other person had time to follow through.

Once I contacted the IGDA headquarters, they put me in contact with Jonathan Hamel, who was the game designer at BreakAway looking to start a local chapter. He and I came together with Soren Johnson, who was working at Firaxis at the time, and Paul Stephanouk, who was a lead game designer at Big Huge Games.

The four of us talked over coffee about what it would be like for us to create a chapter, and then in 2006 we kicked off the first meeting at The Tree House Lounge. It was only later that I discovered this was a place where Microprose developers use to hang out at in the 1980s. Jonathan was elected chair for the first two years, and I have been elected chair the past two years.

Our chapter has been strong, with 50/50 attendance from developers at the local AAA studios, and the other half comprising indies and educational institutions with game-related programs.

Crossroads: What are some of those in your area?

TH: Studio-wise, we have Firaxis Games, ZeniMax, Day 1 Studios, Digital Steamworks, Big Huge Games, BreakAway Games, and most recently Zynga and Kalypso have set up shops.

Crossroads: What are some of the universities or institutes?

TH: We have had tremendous support from UMBC [University of Maryland, Baltimore County], UB [University of Baltimore], and MICA [Maryland Institute College of Art]. They've been refining their programs for a few years and they've had excellent curriculum for getting students ready for game development. Recently Johns Hopkins University has started a game-related program, as well as a few other universities outside of the immediate Baltimore area.

Crossroads: What do you think those students get out of attending an IGDA meeting? Can you describe what goes on at the meetings your chapter has?

TH: We have a broad spectrum of meetings, but we always try to make the topic accessible to anyone regardless of what discipline they're in—programming, animation, game design, and so forth. We want to make it interesting enough so that after spending all day working on music or art or code, developers will still want to come out. If it's interesting to them, it should be interesting to the students as well.

We've done some postmortems of games. We've had Day 1 Studios talk about how they built the engine they use inside of *Fracture*. We've had a few other companies outside Baltimore, such as Fallen Earth, come out to promote their upcoming MMO. Scaleform, who are located in D.C., came up and promoted their GFx 3.0 user interface solution about a month before they premiered it at GDC'09.

We occasionally have topics that are not tied directly to a game, but broader topics, such as what makes a game fun, or this month we talked about all the new input devices that are out, from the additions on the Wiimote to Microsoft Natal, and hosted a roundtable discussion on how they're shaping the industry.

Once every year, we hold our biggest meeting with slightly over a hundred attendees, where we have an indie and student showcase of games. In the last two years, BreakAway has been kind enough to host it. We set up game stations all around for students and indie game developers to set up their games. The first year we tried this format, Firaxis hosted it. I hope we can have each Hunt Valley studio host one of these meetings as time rolls on.

This year we were lucky to have Sid Meier and Firaxis's executive producer Barry Caudil, make time to see the games. That was a treat for

both the students, who got to see these established individuals try out their games, and employees at Firaxis, who got to hear Sid's thoughts on the new games and their mechanics later at his weekly design meeting.

Crossroads: To tie all these things together—being involved in the ACM during college, joining the IGDA, participating in events where you get to meet people like Sid Meier—it sounds like you're really talking about networking.

TH: The industry is very small. There are thousands of game developers out there, but it seems that everyone is just a few degrees off from knowing someone else inside the industry. I know at least here, it's a very tight-knit group inside of Hunt Valley, Maryland. Even when studios need to bring new people in, they'll usually pool from people whom they've worked with before, sometimes even from other cities.

During some recent layoffs in my local area, I knew of one person who didn't get hired into a new job because he had a reputation for not being very positive and not being an easy person to work with.

In that, networking is key. To be out there, to show that you do have a personality that makes people want to work with you. "Is this someone that I could go to if I needed help?" or if I needed help, I wouldn't mind sitting in an office with for two or three hours going over low-level code. Trying to debug code is bad enough. Imagine having to do it with someone whom you don't even want to be in the same space with.

Crossroads: What kind of advice do you have for people looking to finish at university and go into the job market in the next year?

TH: Never stop learning. The most important thing college should have taught you or is teaching you is how to learn. The concept of learning is more important than knowing a particular skill or language. I've found that people who tend to keep learning have the opportunities to move up to the senior-level programmers, the architects, and management.

Crossroads: Is that what you do with Geek House Games? You were saying before that it's a creative outlet, but it seems like it would also be a place where you could self-learn some things that you may not have time to do in a regular full-time job.

TH: Yes, that is spot on. For example, I wanted to learn more about graphics programming and pixel shaders, and the engine that we're using at Geek House Games right now support Pixel Bender, Adobe's version of pixel shaders, and while the language is a little different from what Xbox 360 or PCs are using right now, the fundamentals translate from one to the next.

Likewise, we have an artist, Toby Franklin, who worked with me at Geek House Games on a game called *Collide Reactor*, and he had limited experience with Flash, but working on that project, not only was he able to increase his portfolio for his 3D modeling ability, but he also increased how well he knew Flash and created games using a Flash-based pipeline.

Toby is someone who has since been picked up by Firaxis since *Collide Reactor* came out. He's a good example of someone who benefited directly from networking. When he was interviewing here, I could say, "I worked with this guy on a project, and I can speak to his work ethic, temperament, and ability to work with a good deal of confidence." And that's why I love doing Geek House Games. Besides helping me gain skills, it's also going to lend opportunities to students or others who haven't gotten a break yet.

—Crossroads Staff