

Women in STEM on a Spaceship

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I don't expect to find role models in video games. There's a difference in goals, of course: I don't want to develop my skill with guns, swords, or jumping long distances, and I'm not planning to wreak revenge on anyone. I don't even want to start a small package-delivery business, which is a standard task in the genre of games I favor.

But there's a more obvious, less pragmatic, reason I don't expect to see myself in video games: I'm a woman. As a female gamer, I belong to a demographic occasionally mocked and often dismissed entirely. Though women constitute just under half of all gamers (48%, according to the latest industry statistics), female characters are rare and female protagonists even rarer. Recently, for example, the game company Ubisoft announced that there would be no playable female characters in the new *Assassin's Creed* game because "the reality of production" made animating women too expensive.

As a mathematician, I've grown accustomed to real-world contexts where women are rare. In recent years, women have received just over 30% of the Ph.D.s granted in mathematics. Sometimes even 30% seems high: when I go to research workshops in my subfield, I'm often the only junior woman in the room, and occasionally the only woman. That might be because my field overlaps with theoretical physics, and compared to other STEM fields (Science, Technology, Engineering, and Mathematics), math is doing pretty well. Fewer than 20% of new physics and computer science PhDs go to women; the statistics for engineering are similar.

Imagine my surprise, then, when playing the science fiction epic *Mass Effect 3* made me feel like I fit in. In the *Mass Effect* series, you take on the role of Commander Shepard, who leads the crew of the spaceship Normandy in a battle against marauding machines called Reapers. You may choose to play either a male or a female Shepard; I played a woman. The other characters are scripted: their responses depend on the choices you make as Shepard. As the story progressed, I found myself thinking, "Wow, there are a lot of women in STEM on my spaceship!"

I don't expect to see research mathematicians heading into battle, but the Normandy's crew was full of engineers. Two were men (one with the requisite Scottish accent), but the third official engineer was a woman. Then there's Samantha Traynor, who was doing research in electrical engineering or computer science before the Reapers invaded, the alien woman Tali'Zorah, who analyzed the spaceship's drive

core when she wasn't blowing up hostile robots, and the spaceship's artificial intelligence EDI, who identified as female. In other words, the technical staff on my spaceship was dominated by women.

The *Mass Effect* series is by no means a uniform triumph for feminism. The art direction, in particular, panders to the male gaze; if I were really in charge of the Normandy, I'd ban high heels on combat missions. But I still found myself relaxing as I wandered through a room full of women in technical careers-- even though the women were fictional. I cheered when Sam Traynor promised to start mapping the solar systems where she'd saved lives by "analyzing the crap out of some data".

Mass Effect 3 is an advertisement for scientific heroism of many stripes. The Normandy's exploits buy time for a team of scientists and engineers to research and build a device called the Crucible. Individual efforts are celebrated, too. I teared up when my alien biologist rushed into a collapsing laboratory for a last-minute synthesis with the battle cry, "Anyone else would have gotten it wrong".

I don't think the *Mass Effect* designers deliberately set out to inspire women in STEM. I've read interviews with the writer who created Samantha Traynor's dialogue, for instance, and they concentrate on writing a compelling lesbian character, not writing a realistic computer scientist. But I do think the designers made a concerted effort to imagine a setting where roughly equal numbers of men and women were working together. That effort must have felt cheesy at times-- who frets about Human Resources for an imaginary spaceship?-- but its effect is powerful. Can imagining room for women in another galaxy be a step toward creating space here?