create serious games that use immersive entertainment to further government or corporate training, education, health, public policy, or strategic communication objectives.

How might video games provide any or even all K–12 science and math education in the U.S.? With so much play taking place and with video games becoming such a large part of the economy and of our everyday lives, it's time to create a science of games to help in the development of games and their future instantiations. We need to understand what is happening at the game-human interface and provide educational programs that produce graduates who are able to create the technologies critical to the future of the medium.

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The purpose of this special section is to share significant recent research and vision at the forefront of the creation of the new science. We link it directly with the field of computer science, as computing is the underlying required technology, even as we acknowledge that some of the science of games is beyond the traditional boundaries of computer science. But boundaries between disciplines are not immutable. In fact, the most interesting work in technology development is often cross-disciplinary. We begin with computing as a starting point and understand we will quickly transcend its nominal boundaries.

My personal motivation for wanting to create a science of games is that the new gaming medium is still in the hands of risk-averse entertainment corporations. We get great game entertainment from giants like Electronic Arts, Activision, and Sony but not much in the way of R&D or creativity, new genres, exploration of emotion-cognizant games, novel input devices, or rapid game development tools. Basically, we get Spider-Man n, Need for Speed n+1, and Grand Theft Auto n+2. By the way, these are great franchises, but there are entertainment genres beyond the physical action domain, and we need to explore and create them. The entertainment industry won't do it on its own.

The game industry also won't explore the idea of serious games. There are, however, great reasons to want to understand how to deploy immersive storytelling in service to society in the interactive realm. My crazy dream is that someday we'll replace the education system everywhere with emotion-cognizant video games that children demand to play even in their spare time. Such games would be played with a sensor suite that provides a real-time stream of human-state data as input to the game. Games then become human-state aware and adapt directly to the live player, understanding when the student is/is not learning, and with what level of difficulty. With emotion-cognizant games, we might potentially reduce the school system to a tutoring service for questions and answers not yet incorporated into the online edusphere.

Today's game industry will not build a game-based learning infrastructure on its own. It got killed in the early days of edutainment (2000–2004), and shareholder lawsuits continue to prevent game industry executives from attending conferences where the topic of games for education might be headlined. So, computer scientists must be responsible for making this happen and not wait for the risk-averse to come around.

To be able to deploy the new medium for societal good, we need a well-defined R&D agenda. In [6], the GamePipe Laboratory at the University of Southern California defined the basic research directions as infrastructure, cognition, immersion, and serious games. These directions continue to be valid. We also need educational programs that produce graduates who are able to engineer games, game designs, and next-generation technologies. The mix of articles here covers the gamut, from research to game development education to how to keep students in the field of computer science so we have a future at all.

Merrilea J. Mayo of the National Academies looks into the learning literature on games, from their potential role in education to scientific studies of learning outcomes from games. Her citing the fact that "video games stimulate chemical changes in the brain that promote learning" should make us all