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Abstract for an Invited Paper
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Public Education and Outreach Through Full-Dome Video Technology¹

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My long-term goal is to enhance public understanding of complex systems that can be best demonstrated through richly detailed computer graphic animation displayed with full-dome video technology. My current focus is on health science advances that focus on regenerative medicine, which helps the body heal itself. Such topics facilitate science learning and health literacy. My team develops multi-media presentations that bring the scientific and medical advances to the public through immersive high-definition video animation. Implicit in treating the topics of regenerative medicine will be the need to address stem cell biology. The topics are clarified and presented from a platform of facts and balanced ethical consideration. The production process includes communicating scientific information about the excitement and importance of stem cell research. Principles of function are emphasized over specific facts or terminology by focusing on a limited, but fundamental set of concepts. To achieve this, visually rich, biologically accurate 3D computer graphic environments are created to illustrate the cells, tissues and organs of interest. A suite of films are produced, and evaluated in pre- post-surveys assessing attitudes, knowledge and learning. Each film uses engaging interactive demonstrations to illustrate biological functions, the things that go wrong due to disease and disability, and the remedy provided by regenerative medicine. While the images are rich and detailed, the language is accessible and appropriate to the audience. The digital, high-definition video is also re-edited for presentation in other “flat screen” formats, increasing our distribution potential. Show content is also presented in an interactive web space (www.sepa.duq.edu) with complementing teacher resource guides and student workbooks and companion video games.

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