



IN The Academy

Ray Feeney

Ray Feeney has been an Academy member since 1990. Over the course of his career, he has earned four Scientific and Engineering Awards, as well as the John A. Bonner Medal of Commendation and the Gordon E. Sawyer Award. Feeney is co-chair of the Academy's Science and Technology Council and vice-chair of the Scientific and Technical Awards Committee. Here, the California Institute of Technology graduate discusses his various involvements with the Academy.

You were integrally involved in the creation of the Science and Technology Council in 2003. What was happening in the industry that motivated you to help spearhead that effort?

Ray Feeney: It became clear that Digital Cinema was going to have a significant impact on the motion picture industry and that seemed important. Although several respected organizations had already established some form of industry outreach, they were all groups that dealt with a subset of the filmmaking process. The Academy is one of the few organizations comprised of practitioners from all aspects of the industry. It seemed like the natural place to try and establish a "Center of Excellence" that could try and provide some leadership on the issues. In the distant past, the Academy had a history of similar Science and Research Council activities. Several of us put together a proposal for reactivating the Academy's role of scientific leadership and presented it to the Board of Governors. With their support for the vision of a new Science and Technology Council, the real work began. The industry response has been gratifying with over 200 volunteers actively participating on important working committees that provide programs, reports, consensus building, and a considerable level of overall contribution to the industry at large.

You've recently been very involved in the Council's Image Interchange Framework project, which is still in its evaluation phase. What are the project's goals and what kind of feedback have you received from participants thus far?

RF: This project started out with the idea of simplifying the digital file interchange that is now a critical part of the motion picture creation process, but it has turned into something much more ambitious. It has evolved into an attempt to provide an unambiguous method of preserving the creative intent of the

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filmmakers through the stages of production and on into the archive. In the past, the creative capabilities of the digital intermediate process were not always reaching their full potential. After five years of effort, the development work is basically complete and numerous manufacturers are now providing support for the system in their products. Several digital intermediate facilities and most of the labs have calibrated their processes to the proposed standard and now testing on real world productions has begun. The science underlying the IIF system is a group effort and has been well researched and tested to the extent that can be accomplished prior to full scale industry trials. The goals of the system are laudable and the industry reaction has been favorable. And I do not say this lightly: the resulting imagery is stunning.

How do the issues that the Council is addressing affect movie artists and craftspeople – your fellow Academy members – even though they might not realize it yet or experience it in their day-to-day work?

RF: Digital tools are now permeating all aspects of production, not just post-production. Virtual production, performance capture, digital makeup, and prosthetics applied after the initial production are techniques that impact multiple branches of the Academy. For the first time in decades, methods used to implement the crafts of film production are undergoing a fundamental change. This has implications for even the traditional crafts like acting. In much the same way that digital intermediate tools changed the way that cinematography is applied and digital design tools have changed the process of art direction, every other aspect of filmmaking is either changing or is going to change. The cinematographer is still crafting the look and the art director is still

setting the design, but the way that they apply their craft is rapidly shifting. A few years ago, most actors felt that not much would change about how they apply their skills, but after Gollum and “Avatar,” that has changed somewhat.

Even though we are only seeing the tip of the iceberg now, perhaps it won’t be too long before a virtual character of some kind inspires some additional rethinking of the boundaries between visual effects, acting, and animation. Just like members of the other craft branches, the actors will still be applying the skills of acting, but how they apply them may take on different approaches.

What is your impression or reaction to the new wave of stereoscopic 3D films?

RF: Every significant advancement in cinema starts off as a parlor trick. It is only after an extended period of evolution that the innovation becomes fully integrated into filmmaking. First, it is important to remember that there is a difference between a third dimension and stereoscopic imaging. Perhaps the addition of depth to the cinema experience is as significant as the addition of color, as some have claimed. If that is true, then I would suggest that we are at the equivalent stage as the two-color processes that preceded the true three-color system that Technicolor made famous. With the right script, costumes, story and in a controlled environment, the two-color system allowed for some very effective movies. What the decade of two-color truly did, was show the value and potential for color movies – and this facilitated and motivated the long, arduous, and expensive process of creating true three-color movies.

I believe that better integration of depth information in production will be required if stereoscopic 3D exhibition will truly survive. Stereoscopic projection is a method of creating

the appearance of depth and it may well be appropriate as an exhibition mechanism, but for production purposes, it is a particularly unsatisfying mechanism. So much of the motion picture creation process is done piecemeal, and, except under very special and controlled circumstances, the complexity of piecing together the elements of production with only the stereoscopic views as the depth information is unsustainable. If history is any guide, we have about a decade to push through to supporting true depth capture as part of our production process or stereoscopic 3D exhibition will once again fade away.

Throughout your career, you have been known as someone who strives to raise the quality of the cinema experience. We hear that there is a new initiative on the horizon – ‘next-generation cinema.’ Tell us about it.

RF: Now that we have a solid foundation in the Image Interchange Framework, it has allowed our working group to experiment with some interesting approaches for improving on the theatrical cinema experience. We have started showing the test concepts to the leadership at the Academy and I am optimistic that the Council will be involved in an Academy effort to explore the feasibility of taking cinema to a new level. It is very important to the Academy that theatrical exhibition stays a compelling audience experience in the landscape of rapidly evolving media choices. We now have the tools needed to really try some innovative ideas and the results look very promising. I want to point out that, although the Science and Technology Council is limited to 25 people chosen by the Academy president, any Academy member can participate in our working groups, our committees and on our projects. I imagine these topics will remain of great interest to our members.

You’ve shared in four different Scientific and Engineering Awards from the Academy, each for very different technologies. Is there one that was particularly meaningful or important to you?

RF: Since the awards process is extremely rigorous, I am honored that the Academy felt these inventions and devices were worthy of recognition. Of the four, the one that had the greatest impact on motion picture production was probably the Solitaire Film Recorder. Prior to the Solitaire, film recording was a rather touchy process usually requiring teams of extremely skilled technicians and scientists. The digital feedback system in the Solitaire allowed for the automation of the calibration and control of the film recording process resulting in a simple system that could operate in a typical copy-room type environment. The resulting deployment of this



Ray Feeney and co-recipients Richard J. Lundell (left) and Richard Keeney (center) accepting their 1991 Scientific and Engineering Award for the the software development and adaptation of the Solitaire Film Recorder.

system throughout the visual effects industry after the successes of “Terminator 2” and “Jurassic Park” helped to empower the rise of the vast number of boutique VFX houses that formed the backbone of the ‘Golden Age’ of computer-based VFX. Even though the system is no longer appropriate or viable for 35mm production, Solitaires are still used for Imax recording as part of David Keighley’s DMR

system. Every digitally enhanced image that is repurposed into Imax for theatrical release is still recorded on a Solitaire via the DMR system. It is rare that any digital device is still in use in our industry after even a decade. It is almost 20 years since we were honored by the Academy for the creation of the Solitaire, and I have to say that I believe that the Imax version of recent films like “The Dark Knight” and “Avatar” are stellar examples of high-quality film recording.

In addition to earning several awards yourself, you’re now the vice chair of the Scientific and Technical Awards Committee. What do you find most interesting about working on that committee?

RF: Even though the Science and Technology Council and the Scientific and Technical Awards Committee have very similar sounding names, they are very different in purpose and in their activities. The Scientific and Technical Awards Committee has the responsibility for researching the submitted applications and identifying the truly significant innovations that have changed the course of filmmaking. In order to insure that these awards help further the interests of the industry as a whole, every participant is expected to step above any commercial agendas and to always strive to weigh the interests and the processes of the Academy as a guide for their conscience. Because the discussions are so confidential, the person receiving the award is never aware of the content of the conversations. In an industry that is often portrayed in an unflattering manner, it is gratifying to see that sometimes the most vocal supporter advocating for a particular award is a core competitor. To me, this integrity that the committee members bring to their deliberations exemplifies the Academy at its very best and I am constantly impressed with the degree of fairness and diligence that goes into the analysis and into the discussions.