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14. ABSTRACT

Using the conference convening resources of the Games for Health Project, operated by Digitalmill, we worked to further advance TATRC goals and current efforts by helping TATRC network and exchange knowledge with the growing body of work in health and healthcare that involves commercial game technologies. Furthermore we used this effort to also bring together principal investigators of TATRC projects with the games for health community to further networking and collaboration opportunities. The results of this effort are being used to further inform future TATRC efforts, and to build a knowledgebase of activity and output from the games for health research community. Since games are increasingly leading and contributing to the baseline growth of simulation, modeling, and interactive training helping to bridge the cultural, technical, and development divides that exist between videogame-based organizations and non-videogame organizations is critical to the overall advancement of next-generation training, tele-medicine, and personal health tools.

15. SUBJECT TERMS
Games for Health, Games, Health, Conference, Virtual Humans, Videogame

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Summary
The goal for this funding was to use the conference convening resources of the Games for Health Project, operated by Digitalmill, to further advance TATRC goals by helping it network and exchange knowledge with the growing body of work in health and healthcare that involves commercial game technologies. Furthermore, we used this effort to also bring together principal investigators of TATRC projects with the games for health community to further networking and collaboration opportunities.

In our original proposal we outlined the following activities to be performed:

Pre-Conference Outreach and Data Collection
Identify projects, developers and technologies to bring to our conference to advance TATRC relevant discussions and insight.

On-Site Recruitment & Events
Utilize funds to subsidize travel of key attendees to our conference with relevant TATRC related research and provide unique forums for them to interact together and with other Games for Health Conference attendees.

Post-Conference Follow-up
Provide specific outreach post-conference to debrief key attendees about their activities and opinions of future TATRC relevant roadmaps. Investigate what usefulness comes from exposing traditional modeling and simulation developers to game-based technologies and development talent.

91-Whiskey Demonstrations
Provide an on-site demonstration of 91-Whiskey training.

Virtual Patient Systems and Community Needs Discussions
Initiate and add to on-going discussions on virtual patient technologies and development community needs. These discussions

Audio (and possibly Video Recording) of all Sessions for Post-Conference Publication
With TATRC support we expanded our conference budget to at videotape all of our plenary sessions. We also compiled personal interviews and more to form the beginning of a video archive on the games for health scene. Some of this video was used in a trailer that we produced on the Games for Health Project. That trailer specifically mentions TATRC and has been seen by over 1000 people since its launch.

Results
The second annual Games for Health conference was held on September 21-22, 2005. Close to 300 people attended the event. Two full days of content were provided. A full program schedule is included in Appendix A. The entire main plenary sessions were taped. DVDs of this video proceedings were sent to TATRC in November of 2005. TATRC-West and TATRC @ Ft. Detrick received copies. Included in the taping was also a meeting between attendees and Lt. Col. Fernandez of the 91 Whiskey program where he detailed 91W training and participated in extensive Q&A with developers some of whom are interested in combat casualty care training.

During the conference we held smaller roundtables (not taped) with developers, researchers, and health professionals to discuss critical topics surrounding modeling,

simulation, and games. One focused on virtual patient development and the other focused on general community needs and funding priorities.

During the virtual patient discussion the general consensus was that there were a number of big-picture needs (e.g. natural language systems) but that research overall was all over the map, and that the virtual patient roadmap work the Federation of American Scientists (FAS) has been developing was one of the most useful approaches to organizing research. While many people could point out needs it was clear that many researchers didn't know the full domain of work that had been done toward individual parts of a virtual patient roadmap.

For example, the work done on natural language systems and user interaction interfaces by Michael Matteas at Georgia Tech was not well known. It's game-based origins had precluded it from being known by others. Likewise the physiology work by Paul Kizakavich was not well known by more traditional game developers who were attending. It was clear however that these were tool kits that others could use or model next-generation efforts after. Furthermore it was incredibly clear that both

The community discussion focused on trying to understand what sorts of areas would attendees want funding to work on. This was difficult to address. Attendees seemed to have trouble articulating their specific desires beyond either major projects (a $5M consortium effort to build an open virtual patient software model, for example) or articulating very specific part-task ideas they were hoping for funding for. After some time the one clear agenda item was the idea of repositories of content and digital assets that would aide in production of medical training. This would include relevant 3D models, textures, sounds, video archives for observation by artists, and open-source code. The general sense that seemed to evolve out of this was that coordination and collaboration efforts might actually need to be funded projects not just bully pulpit pleas and chance networking. This seemed useful in that such efforts while leadership intensive are not cost intensive. On the other hand despite low costs things like repositories would require light but consistent medium term funding (5 years) or so to really get the traction needed.

What we learned from these discussions will inform better versions of such working groups in the future. It is clear however, that there is a much bigger pool of collaborators and providers of digital-based simulation training and game-influenced training but that as a collective entity it is still coming together.

Budget & Spending

Our proposal outlined a total of $30,000 in spending as follows:

Pre-conference outreach, data collection and publication	$4,000
Travel and setup of 91-Whiskey SMEs and related equipment	$5,000
Project/Developer assessment brainstorm	$4,000
Virtual patient systems discussions and demos	$4,000
Conference audio and video	$6,000
Management and staff time	$7,000
Total	$30,000

Actual Spending:

Pre-conference outreach, data collection and publication	$3945
Project/Developer assessment brainstorm	$3000

Virtual patient systems discussions and demos	$3000
Conference audio and video	$7066
Management and staff time	$7000
E3 Event facility rental, and related staff time	$6000
Total	$30011

Budget Explanation
The differences in our proposed vs. actual budget are as follows:

- The 91-whiskey demonstration was not possible as originally proposed. We did obtain a great SME session with Col. David Hernandez from Ft. Sam Houston. This helped provide some of the spirit of the goal to expose our attendees to the 91-W training program. We provided videotaping of these proceedings to TATRC we were unable to produce the event as proposed.
- Video production cost $1066 more then expected due to extra funds paid to the facility to aide with the taping.
- Since we could not tape the assessment and discussion brainstorms we reduced their costs by $1000.
- The resulting spending was close to $24000. At the close of our fiscal year we reported that we had some additional unspent funds. We proposed to TATRC to match those funds ($6000) to produce an event during the E3 conference. It was agreed this was a good use of remaining funds in keeping with the core goals of the conference support grant. This event was subsequently produced and had 150 total attendees, featured several TATRC related talks and resulted in a great expansion of useful game-related contacts between TATRC and the greater games-for-health community.

Conclusions
The support TATRC provided was extremely useful for augmenting our national conference and subsequent E3 meetings. Most important is that TATRC is providing us the means to pull together the traditional modeling and simulation community with the upstart but fast growing game-based modeling and simulation community. This work must happen because the risk is that each group adopts the worst outcomes of the other. Ultimately as we and others believe game-based approaches will inform traditional modeling and simulation and vice-versa. However without early and active action to integrate these communities and pull the best practices from each this will not happen. It is to the government's and TATRC's best interest to utilize game-industry based resources (including technology and talent pools) to expand the base of organizations that can provide useful 3D visualization and instruction. This ultimately will improve the product, and increase competition.

The biggest problem it presented was that funding was so late in arriving that it prevented us from realizing its full effect during our fall meeting. We've since taken steps to ensure (if awarded) that we avoid those timing problems. Much of this was caused by general contracting issues that exist in government awards and the immaturity of our event which made it difficult to proceed on activities until the funds were released. Subsequently we do not anticipate such problems again. The result of that was that we were able to allocate just enough funds (20% of the award) toward a subsequent meeting in LA and match it with additional funds. Thus TATRC got two major meetings for its investment.

Recommendations
Given this work we offer the following recommendations to TATRC and similarly positioned agencies:

1. Develop a true roadmap of technologies needed for core TATRC needs and communicate the efficiently to the largest base of developers

2. Develop repositories of digital and other software output that can be reused by other developers building medical and health training systems and tools

3. Further investment in meetings but also further investment in more pervasive means that bring key potential collaborators together. Build systems that make this happen on a more consistent and systematic basis

4. Engage key technology providers and leaders within the game industry and encourage them to work with the core research community

5. Look for ways to instigate, and push forward with others important interoperability systems for patient simulations, epidemiology sims, etc. While this seems to be happening it still needs more work and there is lots to be gained by doing so.

6. Produce a more formal annual survey of technology needs and requests both from the developer and from the user side of the equation. Use TATRC's network to help identify where there are engineering and implementation challenges that others in the community could aide in overcoming or which could be aided with targeted funding.

Futher Post Conference Feedback
As part of our efforts and proposal to TATRC it was agreed that we ask all guests recruited to our event using TATRC funds to further debrief with us on the intersection between games, health, and traditional modeling and simulation. From a review of those debriefs we offer the following takeaways:

- In general we got positive feedback on the conference itself. Most of all people were excited to see what others were doing, felt they were exposed to new projects and collaborators (especially from disciplines they normally don't encounter at other meetings), and specific to the MMVR (medicine meets virtual reality) conference some pointed out we spent more time looking at other avenues such as exergaming whereas MMVR focuses much more on surgery. We have spoken at MMVR before and it is likely there are overlaps but it is also good to know we're offering a unique audience, experience, focus, and content.

- A quote highlighted this difference well "The variety of subject matter was good. I think some of the strengths were in game engines for multiplayer training, critical care / whole patient sims, and exergaming. The AI and natural language components were also very interesting. A good focus would be on the training and learning aspect of medical games/simulations, and their validation. I think MMVR does a good job of covering things like research in deformable tissue, specific medical procedures, imaging, etc."

- One particular respondent wrote "This conference provided us with some very important contacts for future work. It could result in dramatic changes in our business. Seeing some of the applications was informative." We highlight this because we've heard this before and it speaks less to the overall quality and depth of our event and more to the sheer novelty. The inspiration that comes from meeting such a dynamically diverse group of developers seems to be a major plus. We've often advocated that lots of software and simulation developers attend the annual Game Developers Conference for a similar if not superior level of exposure along the same lines. It may well be useful for

TATRC to advocate attendance to such events to their simulation developers for this reason.

- Attendees highlighted the need for more sessions on validation issues. We are working toward doing that. During the E3 focused event we featured many talks with key research outputs and empirical data. There was also advice about using this unique forum to "...inform those from the gaming side of things so they can get a glimpse into the world of what their productions are going to be exposed to in terms of validation and research." This is important because the game development community is used to only market validation not independent scientific validation. Sometimes the two go hand-in-hand but clearly this is a priority to work on. Similarly noted was the comment "The scientific community needs a forum to bridge the gap between the two. No other conference explicitly addresses this, to my knowledge."

- In terms of how gaming could inform the scientific community and traditional modeling and simulation one respondent said "Production efficiency, biz dev, aggressively pursuing new frontiers." We are working on ways within our greater project and future events to explain more about game development production issues and focus on strategies that cold be transferred to traditional modeling and simulation as a result.

- Our post-conference interviews also capture some further negative issues revolving around games. One was the price of gaming technologies such as cutting-edge game engines (e.g. Unreal 3, CryTek, etc.) and another was the general issue of trying to determine what is retained in a more explicitly game-based design. In terms of engine pricing this problem is hard to place. Currently there are many capable game engines that aren't exorbitantly priced. At the same time some of the best engines are costly and the various companies producing them are still adjusting pricing strategies to work better with non-commercial entertainment customers. Overall a lot of this problem could be overcome with better education and meetings that help customers and producers identify ways to lower costs and enable more cutting-edge game technologies to play a greater role in non-entertainment projects. As for the growing debate over games and learning effectiveness we predict this will be a long-term discussion that is highly contextual to the situations evaluated. As the practice of utilizing game elements and technologies grow we feel this problem will work itself out and the optimal uses (much less the market) will speak for themselves.

- Several respondents highlighted the need to continue to discuss how multidisciplinary groups can work best together. Since games-for-health often require teams of people who've usually not interacted further presentations on organizing and leading such groups to effective results is a request we heard. Currently for our fall 2006 conference we've got two talks scheduled that will speak to this.

- One user highlighted the need to often engage learners in physical activities relative to what they will perform clinically. They felt this was still a major hurdle not well addressed at our event. This will probably remain the case as such haptics and other systems are not as prevalent in the games space. While the game industry is increasingly experimenting with such devices we doubt they will reach the fidelity needed elsewhere. Instead our focus should be on looking at how game developers could create new applications for haptic-based interfaces that may aide in practice or training regimens. As we saw with Bob Stone's speech it may be "game-like" exercises that abstract procedures toward the specific moves and skills necessary could play an important role in spatial/muscle-memory tasks. Furthermore using the simplified haptics and other approaches of games we could expose more young people to the gist of what

such practicions are and thus use them to motivate and inform young people toward next-generation surgery occupations we need. As such highlighting the work of Dr. Rosser in this regard was a key task of our fall 2005 event.

- Given our discussion focused on virtual patient needs we collected some feedback about this topic. A couple respondents explained in their opinion that there are some robust physiologic models are out there. There was certainly a universal feeling in our session that many pieces of an all encompassing model did exist in various forms and detail. What emerged during conference and in post-conference interviews is that there is very little interoperability with various models, that there interfaces are not wholly separate from the underlying models, and that coordination that might encourage more collaboration if not outright open standards is still anemic.

- Several respondents felt a consortium to define operability and interoperability standards would be helpful. Our experience is that in such a fast moving field that can be a difficult task. It is likely not on worth walking away from and often the government (and the DoD especially) is a useful entity for instigating such efforts. However, it may also be a sound decision to augment a concerted formalized consortium effort with less formal grassroots efforts and smaller grants that nimbly put together various lightly coordinated efforts. Such work could help improve the overall climate upon which a formalized consortium effort could operate under. Utilizing the work FAS put together thus far, and groups like Games for Health we might be able to further this task faster and with less acrimony then an head first dive into a consortium and standards group.

- One interesting comment in relation to virtual patient interoperability and a consortium or standards group is to look at how other technical standards have been well developed. As one respondent said, "A good model might be, how did the MIDI standard become established: I think that interested parties all paid a fee to join a group that drove the creative/technical decisions, but they also participated in them, and then the industry absolutely FLOURISHED as all of the manufacturers built to a common spec. If you can track down Tom White (Yahoo search "Tom White" MIDI) , the guy who was in charge of MIDI in its first/formative years, he could give you some pointers" The useful point here is that we would need experience in software standards systems not just medical systems.

- One of our game developer respondents focused responses on commercial viability. He suggested increased assistance on making the medical simulation and games space a better business environment. Too much was focused on "revolutionary" approaches and not enough was focused on how to make the economics work. With so much of the space relying on grants, government funding, etc. this is a fair point. Our opinion is that the first economic viability level exists when regardless of next-steps that at least a sizable field of developers are being paid to produce initial work. Without that we can't get to a point of moving things to actual markets or mature levels of production that commercialization is even possible. However, it is apparent that already there are some areas that could make more aggressive leaps to better market viability and this should become an increasing focus beyond single government or non-government sponsors and customers.

- Another fair criticism of the conference in 2005 and the field in general is that there seems to be a lot of "technology in search of a game". This respondent further explained that this was exemplified by "simulations or training programs that they wanted to make more approachable, but there was not alot of 'how to' or 'this is how you do it'. It was about the potential of the two coming together; you know there's a

collision course between the two, but you couldn't see exactly when or where they would hit. Now this might just be the natural swing of things, the idea being so new that it is still coming together, and this is absolutely the venue for it." This is true of the space but in the last year we've seen many more projects reach stages where content and knowledge sharing can move to deeper levels. This is a useful light barometer of progress – the more conference content can mature in what it offers it is likely a sign that actual projects and outcomes are doing the same. Thus conferences like Games for Health are critical means of overall market assessment for such an emergent field.

- A respondent noted we might further tune future talks so that we can help people who want to make an medical application game, vs. those who want to make existing applications more approachable via game approaches & technologies. This is incredibly important because much of the output that can come from the games industry is improving upon existing and accepted systems not virgin development. As we've noticed with the cyberpsychology field which had previously relied on expensive flat-shaded VR technologies game-based methods and technologies can be layered easily on top of this body of work and immediately improve the costs, production structures, and even motivation of the patient to utilize them.

- Further work and sessions on the creation of "Ultra-realistic human characters." was requested. At our E3 event we featured the CEO of a game company who highlighted their work on such technologies. At future events we may try to improve the exposure of attendees to these in-house game-studio technologies and work with their inventors to improve their willingness to share and license them.

- Our project and conferences have done a good job of bringing developers and researchers together but one respondent felt we needed to do more to bring other key parts of the game technology world together including companies like ATI, nVidea, and Ageia. This is a critical need and one that we can work on. It may also be a useful role for TATRC and other agencies to more aggressively approach and work with key technology providers that permeate the game development space. By bringing over these key leaders we can further grow the overall community of developers and use these technology companies leadership position to advance all aspects of our goals.

- A particularly negative note from one respondent indicated they are "dour on the idea of approaching entertainment companies for anything but free access to higher technologies. I don't see it in their interest, other than extracting the most amount of money possible from the medical community, to help them at all." While we understand the premise that creates this notion among non-entertainment developers it is not one we share. Instead what we think is deficient is the lack of business models and support systems that make it possible for entertainment companies to derive further benefit (and revenue) from their work in alternative markets. There is a fundamental disconnect on the business level but it is one we think is solvable through both dialogue and creative means by which people are compensated for their work and IP. Part of this though is also cultural and some game developers are unusually used to exorbitant compensation for their efforts. This will not change so long as key pieces of work in the game industry can reap enormous reward in the market. This is not as pervasive as it seems and increasingly the commoditization of some game technologies is making possible the business models in non-entertainment markets that are incredibly enticing.

- There was discussion at our event and in post-event about how commercial gaming may be requiring improvement in the general presentation, interface and operation of all non-game simulations. One respondent put it as follows, "Particularly for the simulations

involving interpersonal interaction, the more realistic the better. I think as people see the high-fidelity environments in cutting-edge games, they will expect the same in simulations." Given that the games space is constantly improving visuals it is likely others should focus elsewhere which was furthered by the following additional part of this respondents feedback, "Although the right situation and interaction with a virtual patient, for example, may make up for rougher graphics. I suspect that good AI is more important than extremely realistic graphics."

- One particular respondent felt actually that in terms of interface that current medical simulations are better then what they see from most games. Writing as such they said, "I think the interfaces for medical simulations must go beyond what games currently offer. For instance, in surgical simulation, the input devices must mimic the feel and behavior of the actual tools used by the surgeon. In diagnosing a virtual patient, voice recognition and language parsing are key; I doubt choosing from a selection of canned responses will cut it." This is a useful point but one that raises two critical questions:

    1. How extensive is the respondents game knowledge – things are getting quite sophisticated and haptics aside we're not sure this premise will be as true in future if not now? We make this point because often when people talk about how unsophisticated games are we find that's because they've not really looked close enough at the current and near-term level of tech.

    2. To what extent can we take this to mean we need to communicate a better level of need to the game industry? Or expose it as mentioned earlier to the systems in medical simulation that exceed what we see from games. By doing this we may entice more coordinated efforts between medical simulation and gaming in such a way as to maximize things. One challenge we've made to people is the idea that as far as virtual humans go the game industry will invest more in that notion over the next two years then any other single entity. By informing them now what the needs are in derivative markets we might better influence the results of this major investment.

- In bringing together game developers and non-game developers one respondent asked that we do more to have "developers that have released a major title recently share war stories about common pitfalls they've encountered, and the solutions or workarounds they've developed." This is something we can do more of and we're working to incorporate more of this into future efforts. At our E3 event we had Don Daglow of Stormfront Studios show some of their next-generation game work and discuss (albeit lightly) how this is developed. Doing a more specific talk on this is something we can add on to. Along similar lines someone highlighted a specific session where we showed upcoming games regardless of their direct relation to health. This proved useful as a means of showing where general interactive technologies were going. We are thus working for our next event to build a useful showcase of next-generation games as means of increasing the exposure to the best efforts in the game industry to non-traditional crowds.

- Another deficiency sited was the lack of more end users at our event. This is something that is probably true of other medical simulation conferences. We did not have patients present who have used some of the work. Most of the doctor's present were involved in the production of work not the resulting usage. Since we're housing our event at a school of medicine we're going to work more this year to bring in more nursing, doctor, and end-user representatives and see how adding that voice improves general takeaway.

- In terms of validation, customers, and such we also had requests to hear from stakeholders in the medical competency community. For example the American College of Cardiology, the National Board of Medical Examiners, American College of Surgeons, etc. How could these organizations use game-based simulation for medical certification? Would they? This is an important aspect we're hoping to improve about our project – bringing in more health and healthcare groups. Using our relationship with The Robert Wood Johnson Foundation as well as TATRC we should be able to better engage important organizations like these to help us guide further development.

- One respondent made sure to highlight that we have to focus the community on the entire patient system not just physiology. "We must further advocate within the greater virtual patient movement that we don't just mean physiological models but also cognitive, linguistic, emotional, and social models that drive the virtual patients' behavior."

- Another response highlighted that there are lots of pieces of even the physiology model that need to be stitched together better. "There are physiology models that have been developed for non-virtual-patient applications, such as anesthesia training, but have been adapted and extended for training simulations involving virtual patients and for various conditions virtual patients may find themselves in, such as trauma and exposure to terrorist agents. These would be reasonable models from which to begin collaboration."

- To the extent there have been other meetings with output which could aide some of the discussions we brought forth at Games for Health one point was to outreach to the output of a couple of AAAI workshops which have involved individuals who might help inform these discussions. "The workshop held in October 2004 entitled Dialogue Systems for Health Communication and the workshop to be held in March 2006 entitled Argumentation for Consumers of Healthcare are examples."

Next Steps

Our hope is to continue to help broaden, augment, and contribute to the growing use of digital technologies in health and healthcare including specific defense related needs like combat casualty care.

If possible we will continue to seek conference support from organizations such as TATRC building upon what we've learned so far to structure events, discussions, and follow-on activities that continue to move forward.

Specific to our current agenda is our national meeting in September 2006, another E3 oriented event, and some additional specialized meetings. We are also looking to play a bigger role in non-game specific meetings where we can bring our knowledgebase and perspective to a new audience and improve cross-field discussion.

Finally, as a goal we are looking to help organizations like TATRC deepen links with the best companies in the game industry. To do this we are looking at a system designed to proactively engage major technology directors of game development publishers and studios and then bring them to specific smaller meetings, or telephone conference calls to discuss how to more specifically convert core technologies they have to non-entertainment use.

Appendix A: Conference Schedule for Games for Health 2005.

NOTE: proceedings were videotaped and dispatched to relevant TATRC personnel in November.

Day 1: Thursday, September 22, 2005	
8:00am-9:00am	**Breakfast and Registration**
9:00am-9:15am	**Introduction** Stephen J. Downs, The Robert Wood Johnson Foundation
9:15am-9:30am	**Welcome** Dr. Bruce Jarrell, University of Maryland School of Medicine
9:30am-9:45am	**The Future of Games for Health** Ben Sawyer, Games for Health Project
9:45am-10:15am	**Ben's Game: Visualizing Cancer Treatment for Children** Eric Johnston, LucasArts
10:15am-10:45am	**Coffee Break and Open Demonstration Rooms**
10:45am-11:30am	**Next Generation Healthcare Learning Platform** Dr. Claudia Johnston, TAMUCC, Douglas Whatley, Breakaway, LTD. Timothy Holt, Oregon State University
11:30am-12:00pm	**Substance Abuse Treatment with Game Technologies** Ro Nemeth, NIDA Darion Rapoza, Entertainment Science
12:00pm-12:30pm	**Immune Attack** Kay Howell, Federation of American Scientists
12:30pm-2:00pm	**Lunch and Demonstration Rooms**
2:00pm-2:15pm	**Video Games: Just What the Doctor Ordered!** Dr. Anuradha Patel, UMDNJ
2:15pm-2:30pm	**Taking Games for Health Mobile** Charles Shultz, Motorola
2:30pm-3:00pm	**Inside the Experiences of Health Media Lab** Dr. Michael Anderson, Health Media Lab
3:00pm-3:45pm	**Interactive Trauma Trainer & Human Factors Design** Prof. Bob Stone, University of Birmingham, UK & Blitz Games
3:45pm-4:00pm	**Coffee Break**
4:00pm-4:15pm	**Top Gun Training** Dr. Butch Rosser, Beth Israel Medical Center
4:15pm-4:30pm	**Nursing Home Training** Mary Derby, PullUin Software
4:30pm-4:45pm	**Advergaming of Prescription Medicine** Ian Bogost, Persuasive Games
4:45pm-5:00pm	**FreeDive** Lyn Dahlquist, UMBC
5:00pm-5:30pm	**Games Based Solutions for Training & PTSD @ ONR** CDR Russell Shilling, Office of Naval Research

Day 2: Friday, September 23, 2005	
8:00am-9:00am	**Breakfast and Open Demonstration Rooms**
9:00am-9:15am	**The Future of Healthcare & Health Technologies at a State Level** Chris Foster, CSO, Baltimore Business and Economic Development
9:15am-9:30am	**Military Medicine, Modeling, & Simulation: How do Games Fit In?** Harvey McGee, TATRC
9:30am-10:30am	**Panel Discussion: Game Technologies & Future Healthcare Opportunities** Omid Moghadam, Intel Jerry Heneghan, Virtual Heroes Ariella Lehrer, Legacy Interactive
10:30am-11:00am	**Coffee Break**
11:00am-12:30 pm	**Exergaming Panel & Demonstrations** Phil Feldman, Powergrid Fitness Tom Holmes, Sony Computer Entertainment Europe Mark Weiderhold, Virtual Reality Medical Center David J. Ederly, MIT
12:30pm-1:30pm	**Lunch and Demonstration Rooms**
1:30pm-2:00pm	**Mass Casualty Care Simulation Game** Jennifer Trybus, Carnegie Mellon University Steve Schmitt, SimMedical
2:00pm-3:00pm	**MMP Solutions for Healthcare** Robert Gehorsam, Forterra Systems Pat Youngblood, Stanford University Dr. Fred Kron, University of Wisconsin John E. Lester, BrainTalk/Linden Lab
3:00pm-3:30pm	**National Capital Area Medical Simulation Center** Dr. Gil Muniz & Dr. Alan Lui
3:30pm-4:00pm	**Town Hall Meeting**

TATRC Discussion Sessions at Games for Health 2005

Day One

11:00 am-12:00am	Virtual Patient/Virtual Human Road Map 1
2:00pm-3:00pm	TATRC SBIR Brainstorm
4:00pm-5:00pm	Virtual Patient/Virtual Human Road Map 2

Day Two

11:00am-12:00pm	To Be Announced
1:00pm-2pm	Modeling & Simulation Meets Game Development Workshop

Games for Health Day
USC Davidson Conference Center
Schedule: May 9, 2006
Los Angeles, CA

Breakfast & Registration
08:00 am - 09:00 am

Keynote: The Future of Game Driven Technologies
Don Daglow, CEO, Stormfront Studios
09:00 am - 09:45 am

Using Games to Deliver Key Health Messaging
09:45 am - 10:45 am
Moderator: Ian Bogost, Ph.D. (Georgia Tech & Persuasive Games)
Panelists: Michael Goran Ph.D. (USC), Debra Lieberman, Ph.D. (UCSB), Lynn Miller, Ph.D. (USC)

10:45 am Break

Case Presentation: Immune Attack
Kay Howell, (Federation of American Scientists)
11:00 am - 11:30 am

Case Presentation: Carmen's Bright Ideas
Stacey Marsella Ph.D. , Lynn Miller, Ph.D. (USC)
11:30 am - 12:00 pm

Hopelab: Research results for Helping Kids with Cancer using a Videogame
Steve Cole, Ph.D., (Hopelab)
12:00 pm - 12:30 pm

Lunch, Networking & a Briefing
12:30 pm - 1:30 pm

Many games have maps, where's ours?
Harvey Magee, TATRC
01:30 pm - 02:00 pm

Game Technology is Transforming Military Medicine: Is the Inverse Also Possible?
CDR Russell Shilling, NRL
02:00 pm - 02:30 pm

Addressing PTSD, PsychoTherapy, & Stroke Rehabilitation with Games & Game Technologies
Skip Rizzo, Ph.D., (USC/ICT)
Margaret McLaughlin, Ph.D. (USC)
02:30 pm - 03:15pm

03:15 pm Break

An Analysis of DDR Studies & Outcomes
Debra Lieberman Ph.D., (UCSB)
03:30 pm - 04:00 pm

Using Game Consoles to Create New Methods for Disease Management
Dr. Harold Goldberg, MD, (University of Washington)
04:00 pm - 04:30 pm

Using Portable Game Devices to Reduce OR Anxiety in Children
Dr. Anuradha Patel, MD, (University of Medicine and Dentistry, New Jersey)
04:30 pm - 05:00 pm

Cognitive Exercise & Games: Today, Tomorrow, and Why?
Ben Sawyer, Games for Health
05:00 pm - 05:30 pm

What is the Commercial Mass Market Future of Games for Health?
Ben Sawyer (Moderator), Ernie Medina, DrPH (Xrtainment Zone)
Chinwe Onyekere, Program Manager (Robert Wood Johnson Foundation)
05:30 pm - 6:15 pm

Reception & Networking
06:15 pm - 07:15 pm