

## **Humanities Gaming Institute: Serious Games for Research and Pedagogy**

In its ability to accurately model decision-making in a variety of adaptable circumstances, game play has emerged as a productive area of research and teaching for humanities scholars from an array of disciplines. While the utility of game-based learning and testing is acknowledged throughout primary and secondary education, it remains something of a niche player within the university. This is yet another area where higher education has resisted change, much to its detriment. Even where gaming is valued as a social networking platform, in familiar spaces such as Second Life, World of Warcraft, and Everquest, its effectiveness as a research platform remains largely untapped. We propose to host a Humanities Gaming Institute for faculty and advanced graduate students in May 2010 in order to foster a productive relationship between serious games for learning and serious games for research for faculty without access to the infrastructure necessary to undertake such work. Bringing together a collaborative group of twenty teachers, scholars, and researchers to develop serious games will help to highlight the potential in games as a platform for substantial research in the humanities and facilitate its transmission into broader venues. Our model, based on an intensive three week institute followed by a year of sustained technical support, collaboration, and infrastructural assistance, is strategically planned in order to allow our participants to not just develop and share their own research games, but we also want to assist their efforts to share their models with a broader community of scholars at their home institutions. By building into the structure of our project an ongoing infrastructure for supporting participants as they continue to re-think, develop, and re-tool their use of serious games, we can be assured of making a meaningful contribution to the sustained presence of serious games as a component of digital humanities.

We propose a three-week summer institute for twenty faculty and advanced graduate students with an interest in the application of games to research and teaching in the humanities. Convened by researchers working in the departments of Computer Science, English, Digital Humanities, Media Arts, and Film, the Institute will enjoy an interdisciplinary approach to the academic applications for serious games through the background approaches of its faculty directors. With strong support from the Lead Developer at the University's Center for Digital Humanities; two graduate students working in game development, new media, and digital humanities; and two advanced undergraduate students from the department of Computer Science, the Institute will be able to offer an extraordinary level of technical support, game planning, and game development assistance to its participants. With guest lectures by three nationally recognized leaders in the field of serious games as academic work, we can help our participants quickly move to work at the leading edge of gaming and game theory. We believe the time is right to move game-building from a specialization held by a few in academia into an environment where humanists working in a variety of fields can easily develop serious games for teaching and research.

## Significance

By adopting serious games into their research and teaching, humanities scholars are poised to deliver remarkable results in a variety of fields far beyond the obviously connected areas of media arts and digital humanities. The cultural impact of games in the lives of students is becoming so unmistakable that faculty leaders like Ian Bogost and Tracy Fullerton are increasingly blurring the line between the production and interpretation of these new media forms. This is hardly accidental; as new computing tools allow us to build more immersive simulations and more intricate digital models of characters and their movements, digital humanists are adapting these tools and frameworks to produce serious games that have the capability of both altering the behavior of gameplay and studying that behavior in granular detail. This is the impact of applying computational thinking to research; as Jeannette Wing has argued, the computer as a human-built machine has encouraged human beings to attend to their own abilities to work heuristically toward solutions in the face of uncertainty. For a variety of reasons that are more germane to cognitive psychologists than humanities researchers, human beings are much more likely to think creatively, imaginatively, and analytically when confronted with rule-governed game play than they are when confronted by traditional assessment media that more closely resemble tests. Moving our work – both research and teaching – into the more creative and more productive space of gameplay will enable many rich possibilities for the humanities as a discipline.

Other NEH funded projects have traversed the arena of game-based research. In recent years, other projects have sought funding for gaming by building simulations of historic events such as battles from the Civil War, by constructing immersive worlds to reproduce distant environments such as Delphi and Bangkok, and by using hand-held gaming platforms to allow users to navigate physical spaces as though they were virtual. Such projects emphasize the vast potential for researchers working at the intersection of gaming and the humanities. Unfortunately, these projects become essentially single-purpose acts. Each initiative exhausts its resources in the completion of its model, leaving the funding agencies with no way to scale the enormous investment in infrastructure. Each project, while worthy in its own right, fails to move gaming into the mainstream of humanities research. We want to address that deficiency.

Our project aims to create a sustainable infrastructure for routine applications of serious gaming in humanities research and teaching. We propose to unite interested but unspecialized humanities researchers with game developers, new media faculty specialized in the study and production of gaming media, computer scientists studying the environment of games as a decision platform, and digital humanists committed to research at the juncture of computational methods and human culture. In the three-week institute, we'll undertake together an intensive investigation of emerging models for the application of serious games to academic work. The institute will push its

participants to question how gameplay can transform the intellectual spaces of academic work, and will draw from its participants' various interests and specialties to develop overlapping areas of concern and support. Since it provides both the space for a sustained discussion of the theoretical dimension of gaming and a supportive environment for the recursive hands-on work of building games, the project will ask its participants to grow and develop along two directions simultaneously. We'll also provide a year's worth of infrastructural support and technical assistance for the participants as they move back to their home institutions. We recognize that the institute can thereby provide the occasion for both intense engagement and sustained thinking that is then transformed by the participants as they integrate their experiences into the work of their peers at their home departments and programs. We want to assist that transition, by continuing to connect the participants, by hosting their projects going forward, and by supporting their efforts to translate their experiences for their colleagues and peers. By allocating a significant portion of its resources for technical support and infrastructural assistance during the year after the institute meets, our project can build discrete, self-sufficient yet inter-connected nests of faculty researchers working in humanities gaming. In this way our proposal represents a prudent use of the agency's limited resources.

### **Institutional Profile**

The University of South Carolina is fortunate to be able to offer the wide variety of faculty and staff needed to undertake a project of this size and complexity. With an active and ambitious Center for Digital Humanities, a Computer Science program eager to interrogate problems in the humanities, and a Media Arts department that values both producing media art and understanding its meaning and value, our institution can supply the specialists needed to undertake a project of this scope and size. During the three-week session, we will take advantage of the facilities of the school of Computer Science, which has purpose-built classrooms designed to facilitate collaborative work such as ours. Within each of the sponsoring departments, we are well prepared with the computing facilities to support twenty participants during the three-week institute; we intend to take advantage of this redundancy to provide multiple overlapping venues for small group interaction, after hours sessions, and weekend development. In the subsequent year, the Center for Digital Humanities will provide the infrastructure to host the participants' games and projects, through a shared server, allowing the participants to extend the work of the institute far beyond its temporal and spatial confines. We will happily support our core of twenty participants, and just as gladly extend the same support to new partners as they emerge. Facilities are not the limiting feature at our institution to an endeavor such as this; we look forward to sharing in the rich intellectual milieu afforded by the institute. The university is able to make available conference-style housing for the participants in the student dormitories, and there are numerous hotels within a few blocks of the university.

## Curriculum and Work Plan

The Institute is framed to give participants ample opportunities to work at the forefront of both critical theories of gaming and emerging toolkits and platforms for game building. We'll structure these parallel movements to overlap and work in tandem to sustain a rich level of inquiry for the participants. Instead of attending first to game theory and then to game development, our group will work to bridge the concerns of the two realms. For example, on a day when participants investigate the rule-governed nature of gameplay, we will also work with a highly structured rule-driven serious game built by Linguistics researchers to investigate questions of syntactic meaning. By moving between the two mutually supporting areas – development and theory, form and content – we hope to be able to employ the methodologies of each to interrogate the concerns of the other. In an ordinary six and one-half hour day, we imagine we'll spend roughly three hours on each of the two activities, with local differences dictated by the questions and concerns of the group. Many of the days have two such transitions, allowing multiple encounters within each area of work every day.

Our model divides the Institute into three weeks of work (for a detailed overview, see Appendix I), each with a separate theme for the game development, game play, and theoretical readings and discussion. The first week, under the rubric of the theme of "ReCreation: Making and Playing," will work to help participants quickly build familiarity with the five platforms and toolkits for game development: Portable Gaming Devices (PSP and iPhone), web-delivered and local Flash-based Games, the opensource Games4Change toolkit, and the two 3D game building platforms, Panda3D and Torque Game Builder3D. Simon Tarr and Duncan Buell will introduce the participants to the platforms and toolkits, providing ample opportunity to investigate gameplay under each platform. At the same time, participants will begin to investigate the cognitive and structural elements of game design, reading essays by some of the leading experts in game design. In addition to our interdisciplinary panel of project directors, participants will be able to learn alongside one of the foremost national experts in game design, Tracy Fullerton, author of the widely adopted *Game Design Workshop*. Fullerton, who literally wrote the book on the academic study of game design, will lecture on the structural elements of game design, such as rule governance and rule breaking. In her four lectures, Fullerton will also introduce central themes in the cultural theory of game design, investigating with participants the impact of gender roles on game play and the mechanisms of community building within gaming. Each day, participants will discuss foundational texts in the cultural operation of gaming, play exemplary serious games developed on our selected platforms, and work hands-on with the modular tools of game building to develop a fluency with the challenges and dependencies of the practice. In addition to the lectures by Fullerton, during the first week the co-directors will work to build a free-ranging discussion that begins at the elements of game design and works outward to engage the theoretical dimensions of transgression, recursive self-development, visual communication, and collaboration.

In addition to the lectures and discussions of game theory, the first week will structure an appropriate amount of game play to help participants make informed decisions about the subtle distinctions between the platforms and toolkits. The goal of the Institute is to assist the participants in building serious games for humanities teaching and research, so it is crucial that they quickly become familiar with the toolkits and platforms for building a serious game. The co-directors have collaborated to build exemplary games for the participants to interact with in the first week, games which can easily be mastered and whose development is illustrative of the potential for serious gaming in academic spaces. In addition to our easily-built sample games, we've arranged for faculty throughout the humanities to attend the institute and present research games and learning games to illustrate the breadth and depth of gaming as both a digital and traditional area of humanities scholarship. In the first week, we'll have faculty from Linguistics, Literature, Information Science, and Anthropology present academic implementations of serious games to the group, seeding the institute with cross-disciplinary activity that can help sustain transformative work.

At the end of the first week of the institute, our participants will have read and discussed some twenty essays and excerpts on game theory, game design, game play, and cultural theory. They'll have experience with at least ten different games, built from five different toolkits and played on several different platforms. Our participants will spend approximately 10 hours of hands-on work building proficiency across the toolkits, and will receive ample time to work one-on-one with a skilled staff member in order to develop a specific implementation plan for building a serious game. The first week of the session is critical, building a vocabulary and skill set as a foundation for the entire endeavor. For this important week, we've assembled a diverse team drawn from our multiple strengths and resources to ensure that participants are well-prepared to succeed in their work.

In the second week of work at the Institute, we'll transition from maneuvering through the generalities of game development as a set of structural problems and begin the process of building discrete games with our participants. In order to facilitate the many discrete processes of game building, we'll attend closely to games *as play*, interrogating the interactive nature of game play as a series of processes with multiple meanings and experiences. Our theme for the week's work, "Power and Structure," underscores the ways in which the processes of gameplay can coalesce into structural elements which have significant affective force for the players. To help our group focus on the processes of gameplay, we've selected an array of readings to discuss that include Michel Foucault, Manuel Castells, Alex Galloway, and Ian Bogost. In addition to our interdisciplinary team, this week will feature several guest lectures by Ian Bogost, a nationally-recognized rhetorician and game theorist and author of *Persuasive Games*. Perhaps best known for his innovative application of procedural rhetoric to the gamespace, Bogost's analytic methodology and theoretical underpinnings will help stimulate a fruitful questioning of many of the often taken-for-granted aspects of gameplay. Bogost's lectures will serve as a valuable component of the intellectual work

of the institute, helping us to understand gameplay not as an event but as an evolving set of practices and concerns, each of which is alterable.

Alongside the nuanced theoretical examination of gameplay afforded by Bogost and the other authors we'll read in the second week, our participants will work in a detailed and patient way through the elements of game building. No longer developing in unison, our participants will split into teams to work closely with our developers to implement the interactive processes of gameplay into their evolving games. Each team will be structured to allow them to build proficiency in one toolkit or platform. Some of our teams will work to construct a multi-user game environment using one of our opensource toolkits, structuring the  $n$ -dimensionality of action into the game design. Others will experiment with creating 2D and 3D textures and landscapes as expressive elements of gameplay, background components which work suggestively during the game to structure and constrain a player's decisions and affective. In tandem with our staff and team of developers, participants will learn to build modular structural elements of gameplay – for example, avatar creation, which entices users to map their own role-playing capabilities onto the actions of game characters. We'll attend closely to questions of player interface design during this week, often the most recursive element in game design. Throughout the week, we'll continue to provide several hours of hands-on activities, including one-on-one work with developers to produce the participants' serious games. Throughout the entire session, we'll provide lightly-staffed optional time in the labs to continue development on the weekend and in the evening, facilitating participants' disparate work routines.

As the session develops, we'll continue to structure play into the work of the Institute. As the participants' games evolve, the needs and abilities of our group will rapidly push beyond the limits posed by our sample games; instead of working from the samples, our group will start to model game development work on more established serious games that are freely distributed (see, e.g., [seriousgames.org](http://seriousgames.org)). Bringing in these sources as powerful examples of the possibilities of gaming, we'll draw on examples such as the Eternal Egypt application that provides not just access to the cultural artifacts from Luxor but also a virtual environment that simulates cultural experience as gameplay. Throughout the second week, each day we'll interact with a well-known serious game in order to provide a diverse background for our own game development, discussing the game's interactive elements and its ability to structure and facilitate our responses. We'll also continue bringing in faculty research and learning games from around campus, with projects from Cultural Anthropology, Ecology, Composition, and Philosophy. By sampling from well-developed and extremely successful serious games, we want to continue to push our group to imaginatively respond to the possibilities that games offer.

Our third week, "Form and Content," works to complete the games as digital projects and build a sufficient engagement with the work of serious gaming to sustain the participants as game developers at their home institution. We're fortunate to have

noted game developer and game theorist Ben Sawyer as a guest lecturer for four lectures during the third week. Sawyer is best known as the Co-Director of the Serious Games Initiative sponsored by the Woodrow Wilson Center for International Scholars. Sawyer's work blends game design, game theory, and learning or training games. Sawyer will lecture on his development of a taxonomy for games that connects gaming practices in corporate environments and e-learning platforms to pleasure-based casual gaming. Arguing for a continuum in gaming practices between formal and informal spaces, Sawyer will challenge the group to include as gaming practices that seem removed from some of the arena of play. Alongside Sawyer's lectures, the co-directors will work to examine the complex terrain of work/play spaces that participate equally in social milieu formation. We'll look closely at how games facilitate the conditions for human self-understanding within gameplay and at game development in and as education. In participating in the discussions that provide the interpretive framework for the third week, the team of co-directors will work to foster a series of synthetic moments that bring a sense of accomplishment to the session, while also enabling inquiries that move beyond the confines of the Institute to continue at the participants' home institution.

Outside the discussions that frame the game development, the group will focus on work that will deliver a completed game for the participants of the group. Participants will spend more than half of each session in intensive development workshops, working closely with the staff developers to complete the game projects in a sustainable way. We'll include learning sessions on the hardware options that the Center for Digital Humanities provides, including multi-player game hosting, Flash-based game delivery, and ongoing technical and design assistance. We'll work to ensure that the participants constitute themselves as a community, returning to the larger group to share their experiences and connect to their peers. We'll end the session by showcasing the successes, analyzing the deficiencies, and thinking through the processes together.

We envision the Institute running on a three week schedule, from May 10 to May 28, 2010.

## **Participants**

We will conduct a vigorous nation-wide recruiting campaign for faculty members and senior graduate students to attend this Institute. We'll recruit through the ordinary Digital Humanities points of contact—HASTAC and centerNet, but we'll also reach out specifically to smaller schools that have no digital humanities infrastructure. We'll ask applicants to include in their letter of application a description of the research or teaching application for which they wish to develop a game. We'll also ask them to describe the infrastructural support for Digital Humanities research at their institution. We'll prioritize applicants from schools that lack facilities to support game development and infrastructure. All applications will be blind-reviewed by a committee composed of the co-directors of the project.

## **Impact and Evaluation**

This project aims to take an emerging practice within digital humanities research and teaching – the use of games to facilitate research and learning – and render it supportable at institutions that lack a significant infrastructure to conduct digital humanities work. If successful, its impact will be measured by the number of institutions that can undertake emerging work in the digital humanities. The real work of the project, then, occurs not just during the three-week institute, but also during the year following the institute. We’ve devoted a significant portion of our budget – almost all of our salary expenditures occur after the institute has ended. We’ll work carefully to connect with our participants and support their work going forward, to enlarge some of the more sustainable practices within digital humanities research.

## **Staff, Faculty, and Consultants**

Duncan Buell, Principal Investigator, is the Chair of the Department of Computer Science Engineering at the University of South Carolina. His research interests include pure mathematics, pattern recognition within data, and facilitating undergraduate research. Dr. Buell is quite experienced in building and delivering serious games for education and training. In the past, he has worked with faculty working in Law and Business to develop game models for learning. For the Humanities Gaming Institute, Dr. Buell will lead the game development team.

Randall Cream, Co-Principal Investigator, is Associate Director of the Center for Digital Humanities at the University of South Carolina. His research interests include educational use of games, data mining and behavior modeling, and critical pedagogy. Dr. Cream has experience in serious games research, using gameplay decisions to model cognitive impact of the game. In the past, he has worked with students from across the university building learning games and studying causal games as learning moments. For the Humanities Gaming Institute, Dr. Cream will work with both the game development team and the theory and design team.

Heidi Rae Cooley, Co-Principal Investigator, is a theory-oriented new media scholar in the Department of Art/Media Arts and Film and Media Studies Program (University of South Carolina). Interested in the articulation of poiesis (creative production), aesthesis (sensory knowing), and ethos (practice of living), she will invite Institute participants to conceptualize serious gaming in terms of an ethical engagement, one that is attuned to the inter-relations among technology, sociality, and living bodies. Dr. Cooley will facilitate several of the reading discussions, participate in the discussions of game design, and enjoy the game play. Drawing on a notion of “eco-logical praxis” (Felix Guattari), she will suggest that gaming interpreted and pursued along these lines evolves in a dynamic, more intuitive manner because it recognizes and attends to our condition of always being in-relation. Points for discussion drawn from this



philosophical perspective will strive to imagine serious games as the condition of possibility for destabilizing the politicization of life attributed to modern governance of populations.

Simon Tarr, Co-Principal Investigator, is a media practitioner and theorist in the Art Department's Media Arts and Studio Arts division at the University of South Carolina. Prof. Tarr will be providing crucial design support for the Institute participants as they work toward developing their own serious games. Well-versed in several of the gaming platforms to be introduced, as well as familiar with the aesthetics of animation and gaming, he will challenge participants to think more complexly about the interface of their games. Moreover, given his theorizing of interactivity, he will invite participants to imagine serious gaming as a mode of performative enactment of ideas.

Ian Bogost, Guest Lecturer, is a videogame researcher, critic, and designer in the Literature, Communication and Culture at the Georgia Institute of Technology. Dr. Bogost will introduce game criticism that contextualizes games in the long history of human expression. An acclaimed game rhetorician, he will discuss how games make arguments. Interested in uses of videogames outside entertainment, including politics, advertising, learning, and art, he will encourage participants to explore the richly diverse possibilities onto which gaming might open. His analytic methodology and theoretical underpinnings will help stimulate a fruitful questioning of many of the often taken-for-granted aspects of gameplay. Bogost's talks will serve as a valuable component of the intellectual work of the institute, helping the participants to understand gameplay not as an event but as an evolving set of practices and concerns, each of which is alterable.

Tracy Fullerton, Guest Lecturer, is a nationally recognized gaming expert and designer in the Interactive Media Division of the USC School of Cinematics Arts. Fullerton will present on the formal elements of game design and introduce participants to the emerging critical discourse around the nature of meaningful gameplay. In a series of talks, she will provide a necessary overview of the central themes in the cultural theory of game design, investigating with participants the impact of gender roles on game play and the mechanisms of community building within gaming. A proponent for a playcentric approach to design, she will challenge participants to think through gaming and to conceive of gaming as theoretical praxis.

Ben Sawyer, Guest Lecturer, is a nationally recognized expert in serious gaming. Co-Director of the Serious Games Initiative at the Woodrow Wilson Center for International Scholars, Sawyer is an expert in game design, learning through games, and socially conscious gaming practices. An early and active member of the serious gaming community, Sawyer will be instrumental in providing leadership to participants who wish to deliver small, portable, engaging games that tackle relevant social issues. He will lead four guest lectures and work with participants on game development.

Jun Zhou is Lead Developer at the Center for Digital Humanities at the University of South Carolina. She will work closely in all aspects of game development. Most importantly, she will direct the support efforts for the extended support period of the project. Zhou is an experienced game developer and talented programmer.

### **Budget Notes**

There are two noteworthy elements of this institute's budget. First of all, it spends an extraordinary amount of money on graduate and undergraduate student support. These expenses are justifiable because this project, unlike most of its competitors, aims to greatly extend the capacity to participate in research in the digital humanities. With that aim, participant support becomes not an adjunct to the project, but rather the core of its work. Well-trained students are ideal for providing the support necessary, since they will benefit from having to learn to communicate with non-specialized audiences. These same students will be present at the institute, allowing a connection to develop between participants and the students who will help support and sustain their research.

The other extraordinary expense is the stipends for participants, offered at the standard NEH rate. We're hoping to attract researchers from institutions which offer less infrastructural support to their faculty than do many others. We believe that we can essentially subsidize sustainability by sharing knowledge resources. While it would be fiscally irresponsible to develop multiple competing centers with duplicate infrastructures, much of the research in digital humanities relies on large-buy-in infrastructure. Just as we want to extend participation to new partners by sharing knowledge and computing infrastructure, so too do we want to encourage participation by subsidizing subsistence costs. We estimate that most applicants will fully spend their stipends on subsistence costs to attend the institute.