
GAMBIT
SINGAPORE-MIT GAMBIT GAME LAB
Final Report
September 2012

The Challenge

In 2006, Singapore's Media Development Authority (MDA) scrutinized its games industry and noted a growing gap.

While the city-state had succeeded in drawing top console-game producers—exemplified in 2006, when after more than a decade of expansion elsewhere, Electronic Arts chose Singapore as its Asian hub—it was under pressure to produce a workforce capable of staffing the hundreds of specialized roles involved in high-end game development.

Most of these large studios were not yet positioned to exploit the exponential growth in mobile phone use and the rise of casual games. Requiring smaller development teams and investment, local Singaporean companies attempted to make inroads in a brand-new sector of gaming, but many floundered due to inexperience with project scoping, team management, and new technology. Adherence to generic game conventions in Singapore-made games also revealed a great need for innovative game design.

The immense challenges of development, maintenance, and attracting a critical mass of online players meant that successes were few and far between.

Companies in Singapore fronted large amounts of money to build massively multiplayer online games (MMOG), a space dominated by specialists such as Blizzard Entertainment, Turbine Games, and NCsoft. The immense challenges of development, maintenance, and attracting a critical mass of online players meant that successes were few and far between.

Compounding Singapore's challenge was the exodus of a generation of homegrown talent. Young graduates were being drawn away by foreign companies offering the chance to work on the genres local industry didn't, or couldn't, develop.

All of these changes left the Singaporean games industry vulnerable.

The National Research Foundation of Singapore reached out to MIT, drawing on a decade-long relationship nurtured by the Singapore-MIT Alliance (mit.edu/sma). This partnership would result in US$25 million in funding for a first-of-its-kind game research collaboration. It was launched the following year in both Singapore and the United States under the name "Singapore-MIT GAMBIT Game Lab."

This brief report is about the U.S. side of the GAMBIT Game Lab experience. Its six years are a story of a committed team's success, the production of award-winning research, and the Lab's impact on how academia and industry think about the long-term potential of games.

The Mission

Academia and industry have long had a somewhat problematic relationship. Academics shake their heads at the constraints imposed by the limitations and tastes of the popular market, and professionals in the industry consider the academics' view from the ivory tower to be unrealistic. Industry professionals are also too busy keeping their projects financially afloat to read dry academic papers.

GAMBIT aims to serve as an interpreter between academia and industry by creating playable, real-world demonstrations of the concepts and research being conducted in academia. GAMBIT's game lab provides a place for students, academics and industry professionals to work together to develop games that both expand the boundaries of what is done in games while still keeping a close eye on whether the games are financially feasible and, perhaps more importantly, are fun to play.

From GAMBIT'S "Why a Game Lab?"

The lab was envisioned first and foremost as a bridge between academia and industry, but when the MDA and MIT agreed on the new lab's mission and purpose, that vision was described in deceptively dry terms:

"Development of research and education collaborative programs."

"Training students in game research and development methodologies."

"Involve MIT students in the activities of the Initiative."

The reality was anything but dry. The U.S. and Singapore labs would have only five years to train more than 200 Singapore undergraduate, polytechnic, and art school students in every aspect and stage of game design—whether project management, audio design, 3D character modeling, or artificial intelligence—and to train almost all of those 200 students within the constraints of a packed (temporally and physically) eight-week summer program in Cambridge. (And that doesn't count American summer interns from New England schools like the Rhode Island School of Design, the Berklee College of Music, Brown University, and MIT itself.)

Meanwhile, throughout the academic year, the U.S. Lab's cadre of researchers was expected to develop new game studies courses, present top-tier work at international conferences, and publish in the best journals. Its professional staff would organize and promote public events, manage a sizeable number of personnel, and publicize every breakthrough. The Lab as a whole would have to prove its value to the games industry, here and abroad.

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The U.S. lab was formally housed within MIT's Comparative Media Studies (CMS) program. This placed Henry Jenkins, a CMS co-founder and a top scholar of media convergence—a field including new kinds of games—as one of the lead principal investigators, bringing with him the CMS mission of "thinking across media forms, theoretical domains, cultural contexts, and historical periods." William Uricchio, CMS co-director, was also a lead principal investigator for GAMBIT and assembled a steering committee of both MIT and Singapore faculty to set the lab's research agenda. The lab also created space for recent CMS graduates and MIT alums to pursue new kinds of research.

GAMBIT would make previously unimagined types of games that answered previously unthought-of research questions.

Philip Tan, CMS '03, was tapped as the U.S. Lab's executive director. Coming from Singapore, CMS, and game research, Tan was well-equipped to lead what was essentially a startup. He was joined by Generoso Fierro and Rik Eberhardt. The three set up a space borrowed from MIT's Architecture department, in the center of the MIT campus, while a custom lab space was under construction. The staff grew quickly, including game designer Matt Weise and researcher Clara Fernández-Vara, both CMS '04 and specialists in game narrative and storytelling, and Geoffrey Long (CMS '07), who took on the new lab's communications duties. Beyond the 11 graduate research assistants and 177 short-term undergraduate researchers, Jason Begy (CMS '10) stayed on. Reversing the formula, Abe Stein started at GAMBIT as audio director and then became a CMS graduate student.

It would have to do it in a way that engaged and challenged young students, seasoned faculty, a self-confident industry, and gamers at tables, on laptops, on consoles, and wherever fingers tapped on a mobile device.

The Lab also attracted top professionals. Art director Jason Beene had worked with Nintendo, THQ, and Pixar. Interaction design director Marleigh Norton, technical director Andrew Grant, and development director Sara Verrilli were all MIT alums. Norton arrived with usability design skills honed through several previous roles, including at NASA. Verrilli had worked with Irrational Games, creators of Bioshock, while Grant had worked with DreamWorks Interactive. Postdoctoral researchers from universities worldwide would join the lab to develop games around their own research. In time, it became a web of faculty, young researchers, specialized staff, students, and outside advisors.

Together, this team would build a launch pad for prototypes.[1]

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That's exactly what they did.

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1 A full list of games and research questions available at http://gambit.mit.edu/loadgame

Research Production and Influence

When I first began working at GAMBIT, I started a research project on the casual massively-multiplayer online game Faunasphere. *I needed some help and enlisted (then-master's student) Jason Begy to be my research assistant. Over the course of a year we witnessed the game's launch, its expansion onto Facebook, go through community development growing pains, and then, unexpectedly, shut down. To help us understand these massive changes and their place in game culture we've talked with the former residents of the game space, interviewed its community managers, and played the game ourselves. What started as a potential article has expanded into a book-length project and a long term collaboration between the two of us. GAMBIT helped us start that collaboration, which has now crossed countries and extended beyond the original life of the game we began studying.*

Mia Consalvo, past Visiting Associate Professor at GAMBIT
Associate Professor at Concordia University
Author of *Cheating: Gaining Advantage in Videogames*[1]

Over 200 press mentions and generated more than 170 books, chapters, peer-reviewed journal articles, and conference papers. Such production is virtually unprecedented within a single games studies group.

Lab affiliates—not including work they have published before or after their stay—have garnered over 200 press mentions[2] and generated more than 170 books, chapters, peer-reviewed journal articles, and conference papers.[3] Such production is virtually unprecedented within a single games studies group. The breadth is equally impressive, as seen in this handful of titles:

- A Casual Revolution: Reinventing Video Games and Their Players
- All Bang Bang, No Kiss Kiss? The Bond Figure and Video Games
- Serious Learning in Serious Games: Transformative Learning in Video Games
- The Key to Adventure Game Design
- Recursive Learning in Computer Games
- None of the Above: Interactive Dialogue without Multiple Choice
- Academic and Professional Game Development
- Addressing the Challenges of Relevant Gay Game Content
- Collective Artificial Intelligence for Next Generation Gameplay
- Convergence and Globalization in the Japanese Video Game Industry
- Building and Growing a Game Lab[4]
- Hate Speech in Game Communities
- Tackling the Human Condition in Video Games

1 The single-word variant "videogame" has been left in place where used by others in publication titles, course names, and quotations.

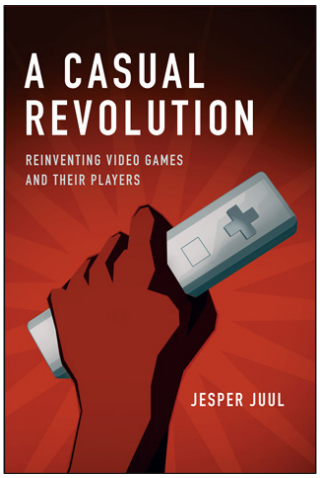
2 http://gambit.mit.edu/campaign/inthepress.php

3 Many of these publications are available online: http://gambit.mit.edu/readme/

4 http://mit.tv/xNsAtY

- *AudiOdyssey*: an Accessible Video Game for Both Sighted and Non-Sighted Gamers

Genres. Adaptations. Cultural exchange. Modes of Learning. Narrative. Sexuality. Artificial Intelligence. Accessibility. Every one of these research themes have huge implications for where academia takes its work and, equally, where industry finds new opportunities.



To take one as an example, *A Casual Revolution*, a book written by visiting researcher Jesper Juul and published through MIT Press, became one of the first authoritative accounts of gamer stereotypes evolving from the obsessive, lone male in a dark basement to the more representative audience associated with the launch of the Nintendo Wii—and reminding all of us that the earliest popular video games weren't imposing, intense first-person shooters with three-year development cycles but brief pastimes such as *Pac-Man* and *Tetris*. Different from both the *Pac-Man* and *Halo* eras, modern casual games are built around players' lives rather than asking them to rearrange their lives around the games.

Juul would put this research into the 2009 summer program game *Pierre: Insanity Inspired*. He wanted to explore how players experience and deal with feedback and failure, a question to that point only half-answered by the intuition of past designers. His team described the game as "sometimes quite rude to players when they fail. Does this make us more or less motivated to continue playing?" Such questions have large, if complex, significance for casual games: for games that aren't supposed to seem to players like a time-sink, ones that can be picked up and left again at the start and end of a bus ride, how do you still challenge players? Are there best practices for how to ramp up a casual game's difficulty?

Two years later, the work of another researcher, Todd Harper, would drive one of the most talked-about GAMBIT games, *A Closed World*. Within the game itself, it never outright said it was about the personal experience of closeted homosexuality—or its painful, unplanned revealing, such as the case with the suicide of outed Rutgers University student Tyler Clementi—but the implications were clear:

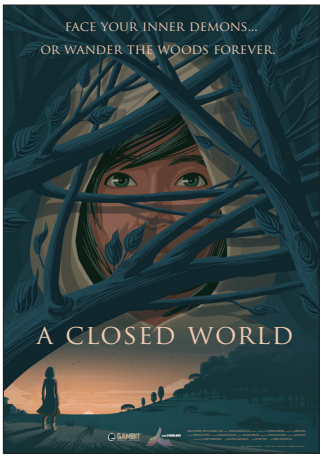
> *[You are] a young resident of a village just outside a forest that everyone says is a place of no return. Supposedly home to hungering demons and a beast that would destroy the village, the forest is forbidden and nobody knows what's on the other side. However, our hero's beloved—tired of the oppressive attitude of the villagers—decided to go there, as anywhere would be better than home. Now it's your turn to follow after. Are you willing to risk everything to find out what's on the other side?*

The research statement was more direct, calling out not just half-hearted approaches to queer content by best-selling video games but the excuses developers use to avoid issues of homosexuality altogether:

> *Game designers and marketing professionals alike have cited a number of reasons for [avoiding queer content], ranging from a perception of institutional homophobia in game culture to a genuine desire on the part of game designers to "get it right" and create games with compelling queer content, rather than feeling that the element is merely "tacked on" in the end. The goal of this research was to present the design team with the challenge of creating a game that had this compelling queer content, and to observe the ideas and hardships they considered and encountered along the way, so that we could learn more about how to approach those challenges in other design contexts.*

The team's efforts followed a path similar to other GAMBIT teams. Assisted by Abe Stein as game director, they worked hard over the summer and were rewarded with enthusiastic coverage. As a team of nine—a designer, a producer, a quality assurance lead, artists, programmers, and an audio designer—Harper's group watched as *A Closed World* was lauded by major games outlets like Kotaku, Gamasutra, Indiegames.com, and PCGamer, while queer issues sites like AfterEllen praised it for diving into problems few thought could be addressed through the medium of games. The reviews also provided some excellent criticism that those like Stein were obliged to address in follow-up writings.[5] Why did the game force the player to choose whether they were male or female? If we're going to explore queer issues in games, why immediately exclude bisexual or transgendered players? The constraints of a two-month summer program immediately generated critiques that others could learn from.

This was exactly the point, as we will see later in a section about the summer program.



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5 http://gambit.mit.edu/updates/2011/10/reflections_on_a_closed_world.php

An influential but less public mission for the Lab was its commitment to classroom-based education, celebrated by the Princeton Review in 2010 when it named MIT the #2 school for undergraduate video game design.[6]

MIT Professor Eric Klopfer's games class dates back to 2004. Then by spring 2008, Comparative Media Studies instructors taught their first games classes. End-of-semester reviews gave high marks to CMS's "Computer Games and Simulations for Investigation and Education" (taught by Klopfer) as well as a new "Game Design" course, taught at both the graduate and undergraduate level by Fernández-Vara, Tan, Juul, and post-doctoral researcher Doris Rusch. Complementing the work getting underway at the Lab, these CMS offerings would grow to include the essential "Introduction to Videogame Studies", first taught by Rusch and CMS graduate student Eliot Pinkus; Fernández-Vara's "Writing for Videogames" course; the unique "Social and Cultural Facets of Digital Games" taught by Mia Consalvo; Tan and Verrilli's "Creating Video Games"; long-time CMS collaborator Chris Weaver's class on the business of video games; and, more recently, courses on video game theory, researching games players, sports video games, and a plethora of short for-credit and non-credit courses taught during MIT's January term.

CMS's best-reviewed class ever—"Game Design"—students designed, developed, and tested non-digital games such as game shows, games of chance, card games, schoolyard games, board games, and role-playing games, all to understand the interaction and evolution of game rules.

The courses were bound to CMS's mission to combine theory and practice. Klopfer's course required the building of simulations. Weaver's class brought in industry leaders. "Creating Video Games" placed students into development teams. And in CMS's best-reviewed class ever—"Game Design"—students designed, developed, and tested non-digital games such as game shows, games of chance, card games, schoolyard games, board games, and role-playing games, all to understand the interaction and evolution of game rules.

Even courses that could easily have skipped over real-world applications stuck to the theory-plus-practice mission. Todd Harper's "Theory and Practice of Player Research", introduced in the spring of 2012, drew "on approaches from humanities, social science, and mass communication fields to inform and inspire student research," but it also required students to develop their own rigorous player study and collect and analyze real-world player data.

GAMBIT's educational mission was as valuable for researchers as for students:

> *During my stay at GAMBIT as a researcher, I have taught courses which bridged theory and practice, as well as mentoring students in game development, during the year and through the summer. Even though they were all game-related, these courses were a constant challenge—being*

6 http://content.usatoday.com/communities/gamehunters/post/2010/02/the-princeton-reviews-top-50-undergraduate-game-design-programs--/1

a pioneer in teaching certain subjects is exciting, but it also means that we have to find new paradigms and models to help us get them across.

Of the kinds of teaching I enjoyed most, mentoring students in game development was gratifying. The learning happened through making games, following the models of situated learning. I particularly enjoyed working side by side with the students, teaching by showing rather than lecturing.

My favourite course to teach has been "Writing for Videogames"[7], which I taught for three semesters. Technically a game design course focused on narrative games, students played games, read on different approaches to design and writing, and developed their own games, both individually and in teams. It was particularly rewarding because students tended to be more engaged and committed than in other game studies courses I taught. It may partly be due to the importance of narrative as a way to frame our understanding of the world, which attracted students who considered themselves gamers and those who were mainly interested in narrative. The focus of the course is aspects of game world building (space, character, challenges), and how each creates different opportunities for interaction.

At the beginning of the course, students brought specific ideas about game design and writing, which I promptly went on to defy by exposing them to games that they may not have been familiar with, including interactive fiction, point-and-click adventure games, and experimental games. Students played both exemplary works and not-so-good narrative games, so that they understood how different strategies of game design create both satisfying and frustrating ideas. Being pushed away from their comfort zone, students initially struggled with designing games that are different from what they were familiar with. In their final projects, students always demonstrated that they learned the core strategies of the course. They were games about topics that are not your usual videogame fare—from a therapist trying to unravel the traumas of a woman represented by cats in her house to a multiplayer game where players explored the dreams of a father about his daughter. They explored different mechanics, such as bargaining or learning a language. They improved their writing too, using fragmented information and interactivity as a way to encourage the player to explore the text. In the end, it was obvious most times that the students enjoyed the challenge. Later on, I observed that those who continued studying in Comparative Media Studies continued applying the strategies from the class, looking for novel topics and worlds to create innovative interactions.

Clara Fernández-Vara

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7 http://mit.academia.edu/ClaraFernándezVara/Teaching/18592/Writing_for_Videogames

None of this, of course, is to imply that GAMBIT never had to face big challenges or sort through the day-to-day issues of a research lab.

It had to convince an industry that its novel approach to game research could pay figurative and literal dividends. On that count, GAMBIT only partially succeeded. It was able to establish a strong relationship with Boston-area independent games companies, supporting one another's experimentation and outreach. It was able to train students who went on to thrive in mainstream and niche game companies, both internationally and in Singapore. But that same industry relies on predictability; it resembles the priorities and cycles of the American film industry, except that gaming's professional independent scene is younger, with fewer resources to publicize, magnify, and reproduce successful experiments. Meanwhile, the Lab's mandate to develop theories that could be applied to the Singapore industry necessarily kept research focused away from the needs of the very biggest companies. Such limitations circumscribed the effect the Lab could have on industry, and even had an effect on its structure:

> *My biggest challenge in running the studio was providing the materials and needs for a diverse staff student body. For staff, the needs of a researcher are different from a developer. For students, it's providing enough opportunities for those wanting to gain experience in game research and development. Luckily, the interests and research questions being asked by the Lab matched up well with student needs.*
>
> *My biggest external challenge was in educating the local industry (be it game, software, health, etc...) in what our lab could provide for them, and how important game research is for their fields.*
>
> Rik Eberhardt, GAMBIT Studio Manager

There were some solutions, nevertheless. Eberhardt went on:

> *I ran multiple game jams[8] each semester, to encourage staff, students, and outsiders to make games and solve problems together. I opened the Lab to local industry for use as temporary work space, in return having them on-hand while classes were taught and our summer program was in session to provide impromptu advice and tips to our student game developers.*

If GAMBIT couldn't affect the industry directly, it could do so over time through the gaming community. Throughout the year, the Lab held frequent public events. "Friday Games at GAMBIT" was a mainstay of the academic year. Generoso Fierro produced dozens of short videos of play-testing,

If GAMBIT couldn't affect the industry directly, it could do so over time through the gaming community. Throughout the year, the Lab held frequent public events.

8 Short, casual events, typically with small teams creating games around a theme.

in-house talks, and special events. Some of those special events included fundraising for charity, such as the "Complete Game-Completion Marathon," which challenged people to play a game of their choice from start to finish, typically documenting with a live video feed their frustration, trash-talking, and, finally, joy.

There were one-time, open January term classes that gave researchers and staffers a chance to share their passions. Tan hosted "The Digital Game's Value Chain" about how the industry works; Fernández-Vara, a board game workshop; another, designing games for autism research. There were tours of local game companies, design contests, 48-hour game jams, gaming documentaries, and a wealth of hands-on tutorials.

These events had a profound effect on how students and local industry came to value a lab dedicated to games.

> *The Boston game community has benefited tremendously by having a relationship with GAMBIT. From hosting game jams that introduce people to game development to encouraging academic exploration, GAMBIT has influenced countless members of our community to pursue their passion for making games.*
>
> Caroline Murphy, Boston Indies

> *GAMBIT has been an amazing anchor for the Boston game development community. The GAMBIT staff were always generous with their time and with the space itself, and this helped us springboard into the strong, vibrant culture it now is. GAMBIT was among the first hosts for the Global Game Jam in Boston. I was the very first host for the GameLoop unConference series and has hosted innumerable other events over the years. Outside developers often comment that Boston's game development culture and scene are among the best they've ever participated in—this is in no small part due to GAMBIT.*
>
> Scott Macmillian, Macguffin Games and GameLoop, Inc.

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Ultimately, the GAMBIT/CMS distinguishing feature, that is, combining theory and practice, placed big demands on its staff and researchers during the academic year. So a balance was struck: most of the theory—publishing, academic conference travel, public talks, teaching—took place from September to May, while the hard-core practice—creating and testing games—was largely the domain of the summer program.[9]

9 Game research continued throughout the year, and planning for the summer program's investigations and student personnel was also a year-round effort.

The GAMBIT Summer Program

Rich Vreeland was a 2009 summer program alum who worked as the audio designer on *Waker* and *Woosh*. He is now a freelance interactive audio designer with clients ranging from independent game studios to large companies like Bungie, Ubisoft, and Hasbro:

> *GAMBIT was a tremendously valuable experience for me. It was also quite challenging, and fun! The opportunity to be the audio lead on a project gave me a strong sense of responsibility that made me feel like I was valuable, as well as a sort of positive accountability that I thrived under. We all had an equal stake in our project, even outside of our own respective disciplines, and as a result, my internship there gave me my first glimpse into what it's like to be a game designer. They also passed on word of job opportunities to me after I left the program, and I can't understate how much the whole experience has meant to me, and how much it propelled my career forward.*

Vreeland's experience mirrors others', in the sense that the summer program's research can't be separated from its educational purpose. *Waker* and *Woosh*, in fact, combined them: they were games to research education. They were aimed at middle school and high school students as a complement to their physics classes. They functioned as an A/B test. *Waker* communicated physics principles through narrative play and art but *Woosh* through abstract puzzles. And while full research wasn't completed during the summer, subsequent work showed that Waker, with enhanced narrative elements, was more effective, valuable data for educators.

As with *Waker*, not all research happened in the summer. Often MIT students stayed on as undergraduate researchers through the summer and academic year.

Alec Thomson, a recent MIT graduate and soon to complete his engineering master's, worked during both the summer program and the academic year as a programmer, including summer '09 as a member of the team that developed *Dearth*—an especially challenging bit of game-based research. Dearth explored Markov Decision Problem solvers: a method for implementing artificial intelligence that doesn't rely on cumbersome "if/then" programming. Instead, it takes the rules of a game as an input from which the A.I. can use to create its own responses, even in novel situations. Note in his experience how tied to each other the research and educational missions are—not to mention Thomson's praise of GAMBIT's attention to social issues:

> *I found GAMBIT when I was a freshman, almost by pure accident. Soon after, I started working as a UROP[10] and continued working with GAMBIT all the way through my graduation last spring. I consider myself incredibly lucky to have found GAMBIT early upon arriving at MIT and to have had an opportunity to work with the amazing people there. I can't count the number of times other upperclassmen discovered GAMBIT for the first time and lamented not finding the place sooner. This reinforces how lucky I was to discover it so quickly.*
>
> *By the time I took my first software engineering classes at MIT, I had already been working at GAMBIT for more than two semesters and a summer session. I discovered that the kinds of skills these classes hoped to teach—team dynamics, leadership, good engineering sense, production skills, and iterative design—were already taught as an implicit part of every GAMBIT UROP. Needless to say that these classes were subsequently easier to consume and even more valuable as a result of my GAMBIT experience.*

10 An "undergraduate research opportunity," MIT's term for a for-credit internship.

The staff at GAMBIT made a real effort to educate their students about social and equality issues surrounding games and the games industry, something I felt was severely lacking in the traditional engineering departments at MIT. As a result, not only do I feel that my time at GAMBIT prepared me to become a better game and software developer, I also feel it prepared me to become a better person.

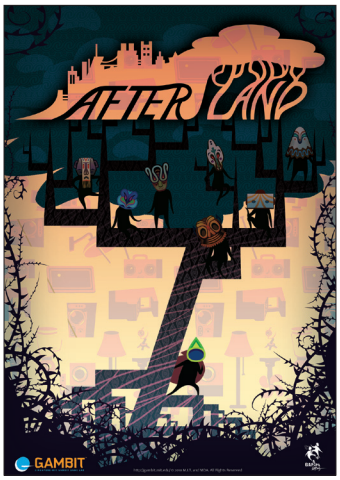
The game industry needs more places like GAMBIT and I hope that like-minded alumni will work together to foster similar communities in the future.

It's also a testament to Alec's success at GAMBIT that he left to pursue another internship: as a software engineer at Microsoft.

The summer program was nevertheless a learning experience for the GAMBIT staff. At first, teams were presented with a research question, and it was up to the team, with a staff game director at the helm, to spend the summer working through the challenges. This arrangement led to some mixed results, with the game concept, rather than the research question, too often driving development. So the second summer led to the breakthrough of embedding researchers in each team.

The subsequent games were much more conceptually provocative. Andrew Grant's *Robotany* gave players the tools to create their own artificial intelligence rules. Matthew Weise's *The Snowfield* proved you can create complex narrative without complex processing power—it became a finalist for the 2012 Independent Games Festival. *Squeezicks* brought together GAMBIT and the Boston Museum of Science to study soft-body physics—squishing, bending, twisting, stretching, and tearing 3D objects in real-time. Fernández-Vara and her team made *Stranded in Singapore*, a game to test procedurally-generated puzzles, that is, puzzles you can't play the same way twice; this resulted in a set of tools other developers can use in their own games. *Afterland*, with Konstantin Mitgutsch as product owner, explored how learning can be affected, improved, or frustrated by subverting video game conventions. *Elude* modeled depression; *Poikilia*, the teaching of color theory; *Symon* (an Indie Game Challenge winner), dream logic; *Yet One Word* and *Seer*, the Greek tragedies of Sophocles.

Outside developers took note of all these successes using embedded researchers. A get-it-done attitude needn't exclude—or even be hampered by—laser-like attention to, scrutiny of, and refining of a game's core question. The scope of a summer game may change over two months, but with a great research question, you don't have to compromise on innovation.



And all of this, too, supported GAMBIT's designated mission: to train a new generation of Singaporean game professionals. Undergraduates in every field—but especially going into the games profession—now have talents they need to develop through hand-on practice. They had to learn to work in teams with varied backgrounds. They had to meet inflexible schedules. They had to know how complex project systems works. A 2008 summer program alum sums up how GAMBIT did on these accounts:

> *The rapid prototyping skills that I picked up at GAMBIT have proved especially valuable in developing and iterating new gameplay mechanics for the* Assassin's Creed *series of games. Working together with teammates of varied backgrounds, skills, and ability during the summer program has helped me integrate well with the large multicultural and multinational team here. My experience at GAMBIT has also made me more aware of the various stages of game development from conception to production to distribution, and the importance of maintaining high production values throughout the entire development cycle.*
>
> Fairuz Lokman
> 2008 summer program alum as a student at the National University of Singapore, programmer on *Phorm*, and now Gameplay Programmer at Ubisoft Entertainment

Lokman's positive experience was one of many. When one considers how many recent college graduates either have trouble finding jobs or do find ones but in fields with no connection to their major (or worse, to their interests), it was thrilling when the Media Development Authority of Singapore reported that half of GAMBIT's summer program grads went on to find jobs in the game industry—and an even larger percentage if you include employment in Singapore's media industry in general.

Summary

The Singapore-MIT GAMBIT Game Lab took enormous pride in its work. As you'll see in the appendix, no one could compete with its productivity, especially given that much of it was done in a blistering two-month block each summer. Its research was world-class. Its students, the best-trained. Its team, the most dedicated.

As it shifts into its new role as the MIT Game Lab, it has been worth looking back over these successes and lessons. They are the basis for the new Lab's broadened focus, no longer meeting the needs of just one country's game industry but actively recruiting new partners in all fields to ask, collaboratively, "What questions can be answered through a game?"

How can a health provider use a game to improve patients' diet and exercise? How can a museum use a game to draw patrons deeper into collections? Can the blind play with the sighted? Can a game communicate dream logic and the themes of Sophocles? Because of the Lab, we already know the answers to these questions are yes.

The MIT Game Lab carries on this tradition while adding this new, driving component to apply its five years of research to the challenges presented by its partners. It's time to put these lessons to work.

If by work, you mean a game.

Appendix

Table 1: Key Performance Indicators (KPIs) for Singaporean funders as at FY12 Q3

KPI	Targets (to be met by 30 Sep 2011)	Realized KPI (as of June 2011)	Realized KPI (as of Sep 2012)	% realized to date
Training of Singapore undergraduates, polytechnic students, art school students	240	212	269	112.1%
Support for Singapore graduate students	36	69	119	330.6%
Support for Singapore Researchers (faculty, post doctoral researchers)	36	58	85	236.1%
Papers published or accepted (*http://gambit.mit.edu/readme*)	42-60	124	233	388.3%
Publicly distributable games (*http://gambit.mit.edu/loadgame*)	36	44	57	158.3%

Table 2: Key Metrics for MIT as at FY12 Q3

Training of US undergraduates (MIT UROPs, student workers from RISD, Berklee, & other institutes)	177
Support for US graduate students (through MIT Comparative Media Studies and Electrical Engineering & Computer Science)	13
Support for US Researchers (faculty, research staff, post doctoral researchers, visiting scholars)	29
Students taught at MIT classes	1000*

*estimate based on average enrollment for all MIT game curriculum

Table 3: Games Produced by GAMBIT

http://gambit.mit.edu/loadgame

Year	Game	Year	Game
2007	Elementalyst*	2010	PAX POX*
2007	AudiOdyssey	2010	Afterland
2007	Backflow	2010	elude
2007	The Illogical Journey of Orez	2010	Improviso
2007	TakeOut!	2010	Poikilia
2007	TenXion	2010	Symon
2007	Wiip	2010	Seer
2008	NeuroTrance*	2010	Yet One Word
2008	Ochos Locos*	2010	Monsters in My Backyard†
2008	Sc-rum'pet*	2010	CarneyVale Showtime (Games for Windows)†
2008	Akrasia	2010	CarneyVale Showtime (Windows Phone 7)†
2008	GumBeat	2011	Abandon Complete*
2008	Moki Combat	2011	QP Curio's Novelty Engine*
2008	Mūzaïc	2011	A Closed World
2008	Oozerts	2011	Eksa
2008	Phorm	2011	Robotany
2008	Picopoke	2011	The Snowfield
2008	CarneyVale Showtime†	2011	Squeezicks
2009	The Bridge*	2011	Stranded in Singapore
2009	GumBeat Gold*	2011	Backflow (for iOS)†
2009	Moki Combat v2.0*	2011	Dark Dot†
2009	Rosemary*	2011	Snap Escape - The Epic Swing†
2009	Tipping Point (paper)*	2012	Bosnobo: Primate Change
2009	Tipping Point (digital)*	2012	Fugue
2009	Abandon	2012	The Last Symphony
2009	Camaquen	2012	Movers and Shakers
2009	Dearth	2012	Movmote
2009	Pierre: Insanity Inspired	2012	Phantomation
2009	Shadow Shoppe	2012	Nightmare Duel†
2009	Waker		
2009	Woosh		
2009	Snap Escape†		

* made at the US MIT Game Lab by US students, summer program alumni, and US staff

† made at the Singapore lab by summer program alumni and Singaporean staff

Table 4: Awards Received for Games, 2007–2012

Game	Award
CarneyVale Showtime	Dream-Build-Play 2008 (1st place)
elude	Foundations of Digital Games 2012 Research & Experimental Game Festival
elude	Games for Change ANZ 2012 (featured)
The Snowfield	Independent Games Festival 2012 (student finalist)
Robotany	Independent Games Festival China 2011 (student finalist)
Afterland	Independent Games Festival China 2010 (student finalist)
CarneyVale Showtime	Independent Games Festival 2009 (finalist, Seumas McNally Grand Prize)
Picopoke	Independent Games Festival 2009 (finalist, Next Great Mobile)
Backflow	Independent Games Festival Mobile 2008 (finalist)
Symon	Indie Game Challenge 2011 (winner, Kongregate Award)
Waker	Indie Game Challenge 2010 (finalist)
A Closed World	IndieCade Festival 2012 (finalist)
Improviso	IndieCade Festival 2011 (finalist)
Akrasia	IndieCade Festival 2009 (finalist)
AudiOdyssey	IndieCade Festival 2007 (E3, E for All, Game City)
Backflow	IndieCade Festival 2007 (E3, E for All, Game City)
The Illogical Journey of Orez	IndieCade Festival 2007 (E3, E for All, Game City)
TenXion	IndieCade Festival 2007 (E3, E for All, Game City)
Wiip	IndieCade Festival 2007 (E3, E for All, Game City)
Revolution	IndieCade Festival 2007 (E3, E for All, Game City)
A Closed World	Meaningful Play 2012 (finalist)
The Snowfield	Meaningful Play 2012 (finalist)
Movers & Shakers	Meaningful Play 2012 (finalist)
Afterland	Meaningful Play 2010 (winner, Best Student Created Game)
Afterland	Meaningful Play 2010 (runner-up, Most Innovative)
elude	Meaningful Play 2010 (winner)
elude	Meaningful Play 2010 (runner-up People's Choice)
Yet One Word	Meaningful Play 2010 (winner, Best Overall Game)
Yet One Word	Meaningful Play 2010 (runner-up, Best Student Created Game)
Snap Escape	Mochis Flash Awards 2010 (runner-up, Best Social Game)
Rosemary	Jay is Games Best of 2009 (nominated)
Akrasia	Jay is Games Best of 2008 (nominated, best game or interactive puzzle)
Carneyvale Showtime	PAX 10 2009
Dearth	PAX East Boston Indie Showcase 2010 (finalist)
Waker	PAX East Boston Indie Showcase 2010 (finalist)
Movers & Shakers	Serious Games Showcase & Challenge 2012 (finalist)
A Closed World	Serious Play Conference 2012 (Bronze award, Student)
The Snowfield	Serious Play Conference 2012 (Gold award, Student)

Table 5: GAMBIT Faculty, MIT

Name	Organization
Frédo Durand	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Eric Klopfer	MIT Schiller Teacher Education Program (STEP)
Leslie Kaelbling-Pack	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Tomas Lozano-Perez	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Nick Montfort	MIT Writing & Humanistic Studies; Trope Tank
Scot Osterweil	MIT Comparative Media Studies; Education Arcade
Jovan Popović	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Deb Roy	MIT Media Lab
Russ Tedrake	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)

Table 6: GAMBIT Faculty, Singapore

Name	Organization
Golam Ashraf	National University of Singapore
Richard Davis	Singapore Management University
Michael Garry	Temasek Polytechnic
Anthony Fang	National University of Singapore
David Hsu	National University of Singapore
Tan Ah Hwee	Nanyang Technological University
Wee Sun Lee	National University of Singapore
Tze-Yun Leong	National University of Singapore
Meng Hiot Lim	Nanyang Technological University
Tim Marsh	National University of Singapore
Kevin McGee	National University of Singapore
Alex Mitchell	National University of Singapore
Ong Yew Soon	Nanyang Technological University
Ooi Wei Tsang	National University of Singapore
Yong Peng Why	National University of Singapore
Lonce Wyse	National University of Singapore
Foo Chek Yang	Temasek Polytechnic

Table 7: Game Development Curriculum created at MIT

Course	Title
CMS.300/841	Introduction to Videogame Theory
CMS.607/843	Theory & Practice of Player Research
CMS.608/864	Game Design
CMS.610/922	Media Industries and Systems
CMS.611/6.073	Creating Video Games
CMS.612/866/21W.767	Writing for Videogames
CMS.616/868/21W.768	Social and Cultural Facets of Digital Games
CMS.590J/863J	Computer Games and Simulations for Investigation and Education
CNS.600	Special Topics: Videogame Theory and Analysis
CMS.600/996	Special Topics: Casual Games and Casual Players
CMS.600/996	Special Topics: Making Deep Games
CMS.S60	Special Topics: Unpacking "Super Serious" Serious Games
CMS.S60	Special Topics: Games for Social Change
CMS.602	Special Topics: Learning to play - playing to learn

Table 8: Princeton Review rankings for Game Design

Year	Ranking
2010	Number 6, Undergraduate programs
2011	Number 8, Undergraduate programs
2011	Honorable mention, Graduate programs
2012	Number 2, Undergraduate programs
2012	Number 3, Graduate programs