MIT Game Lab Exploring the potential of play

The MIT Game Lab brings together scholars, creators, and technologists to teach, conduct research, and develop new approaches for applied game design and construction.

The Lab’s interdisciplinary work combines creativity and technology, storytelling and engineering, imagination and problem solving, humanities and science.

The Lab unites scholarship in the humanities, social sciences, computer science, design, and the arts in a project-based studio curriculum, situated within MIT’s Comparative Media Studies | Writing department and in collaboration with other MIT departments and disciplines.

Cutting-edge research

The MIT Game Lab’s mission is to explore, educate, and engage the public by creating groundbreaking games, interactive online courses, and new applications to real world challenges.

The MIT Game Lab connects the inventiveness and technological strength of MIT undergraduates to advanced methods in game design and humanistic research. The Lab is uniquely positioned to explore the new challenges of games and play including e-sports, livestreaming, co-operative gameplay, diversity, and inclusiveness.

International recognition

The MIT Game Lab has a track record of developing award-winning games that demonstrate new research concepts, algorithms, and cutting-edge technology. Ranked by the Princeton Review as a Top 10 Game Design Program in North America since 2008 and supported by a $1 million endowment, the MIT Game Lab maintains MIT’s role as an international leader in the study, design, and development of games.

To contribute to the MIT Game Lab’s award-winning research and education, contact:

- William Uricchio, Professor of Comparative Media Studies, uricchio@mit.edu
- T.L. Taylor, Associate Professor of Comparative Media Studies, tl_taylor@mit.edu
- Scot Osterweil, Creative Director, scot_o@mit.edu

MIT Student Engagement

- 6 studio classes in high demand
- 260 undergraduate students enrolled each year
- Students majoring in Comparative Media Studies, Writing, Electrical Engineering & Computer Science, Brain & Cognitive Science, Mathematics, Management
- 10 Undergraduate and 2 Graduate students employed as research assistants each year
Make a Donation

Donors are invited to support the teaching and research of the MIT Game Lab by making a tax-deductible gift of any amount or by contributing to the Lab’s endowment. Expendable gifts also support the Lab’s annual operating budget, which is currently $2M.

Donors have the chance to become active members in our network of researchers interested in the potentials of games and play.

All donors making an annual gift of $50,000 or more are invited to:

- Participate in an annual executive summit to discuss new research findings.
- Contact MIT and local students through MIT Game Lab alumni networks.
- Attend student presentations and showcases of final game projects.
- Send an employee as a visitor to the MIT Game Lab for up to three months to gain access to our network of MIT labs and researchers.
- Invite one of our researchers or staff to your location for a week to work and talk with your organization.

Donations to the MIT Game Lab will help build upon 8 years of games education at MIT. We have so far:

- Developed 15 courses and taught 70 instructor-semesters to over 1000 MIT students.
- Mentored 400 undergraduate interns from colleges, universities, and institutes in New England and Singapore as well as 20 MIT research assistants.
- Produced instructional materials for MIT online free education services (OpenCourseWare, TechTV, EdX).
- Developed courses for MIT Professional Education, Short Programs.

Educational Outreach

As part of its educational outreach efforts, the MIT Game Lab will include donors into a network of industry professionals who interact with the Lab and its students as regular guest speakers from the game industry, by connecting students to internship programs and jobs, providing temporary facilities for local developers, and organizing events for local game companies.

Events hosted include:

- Boston Festival of Indie Games, a showcase of games developed in New England and surrounding areas.
- Intern recruitment events.
- Game Jams for external partners such as the US Department of Labor, Games for Change, and Mozilla Foundation.
- Executive meetings between donors and network of MIT Game Lab affiliates about special topics of interest to industry.
- Professional Development courses on game development.
Work with our Students

Organizations are invited to work with our students on interesting topics within a class structure. The MIT Game Lab teaches multiple game development and design classes each semester and is looking for special topics to use for interesting design constraints.

The MIT Game Lab is also looking to create competitions, designed around topics your organization is interested in as a recruiting event, held during MIT’s January Independent Activities Period or Summer session.

Work with students in a class or competition:

• Donors are free to approach students regarding the licensing of IP developed in class.
• Donors would have access to meet and recruit students from the class/competition.
• Donors would be invited to all other annual gift activities

Costs for class or competition covered by $100,000 expendable gift donation include:

• Developing competition or class.
• Materials used for competition or class.
• Salary for lecturers conducting competition or class.
• Operations overhead incurred by MIT Game Lab in production and conduct of competition or class.

Studio Curriculum

Many of our courses can accept constraints, technologies, or ideas proposed by an external funder for the students’ final projects. In the past, students have created games using APIs for tracking health & wellness, games exploring 2-player single-screen design, and games for museums.

Our courses include:

| Introduction to Game Design Methods | Creating Video Games |
| Game Design | Advanced Games Studio |
Sponsor Research

Explore a Research Topic with Us

The MIT Game Lab can hold a customized workshop for your organization to explore topics that will help you in your work. The MIT Game Lab consists of a rotating number of staff and faculty from various disciplines and backgrounds, including academia and industry.

*We can run a multiple day workshop for your organization, generally $30,000 for 1 full week.*

- Topics of workshops have included the design and use of games for purposes other than entertainment (games for health, games as documentary, games for learning, using game design methods for innovation).
- We can include multiple organizations in a single workshop and can tailor a workshop for any time period up to a week, and for up to 50 people (cost will vary).
- Past workshops have been held for organizations concerned with health care, film, and innovation in business.

Create New and Innovative Game Prototypes with Us

Companies, foundations, and research groups are invited to propose game concepts to the MIT Game Lab for prototyping:

*Game prototypes are generally budgeted up to $300,000 for 12 months of development:*

- Sponsor will have the right of first offer to a *royalty-free, nonexclusive license* to assets, source code, and playable prototypes developed on the sponsor’s concept.
- Prototypes are generally researched & concepted during the Fall and Spring, with development occurring during the Summer session.
- Prototypes developed by the MIT Game Lab will be made publicly available eighteen months after they are delivered to sponsors.
- Prototypes created would be a vertical slice of polished gameplay, examples of which can be found at [http://gamelab.mit.edu/games](http://gamelab.mit.edu/games).

23 of our games have won a total of 39 awards as recognition to our contributions to innovative game development for multiple constituencies (mobile games, entertainment games, serious games, games for learning, games for research, games for health).

*Showcases and festivals featuring our games have included:*

- **Boston Indie Showcase** at PAX East
- **Independent Games Festival** at GDC and GDC China
- **Indiecade** (since 2007, we have always had a game in this showcase)
- **Serious Play Conference** in Redmond, WA
- **Serious Games Showcase & Challenge** at I/ITSEC in Orlando, FL
- Academic conferences such as **Meaningful Play** and **Foundations of Digital Games**
Current MIT Games Curriculum

Since our launch in 2007, the MIT Game Lab has developed and sustained a robust games studio curriculum in coordination with other CMS/W research and teaching programs including the MIT Education Arcade; Scheller Teacher Education Program; Imagination, Computation and Expression Lab; and Writing and Humanistic Studies.

In keeping with MIT’s vibrant lab-based culture, the Game Lab enables students to see how games are made and how games work and provides them with hands-on expertise to inform their intellectual understanding.

Courses taught by the MIT Game Lab

**Game Development:**
- CMS.300 Introduction to Videogame Theory and Analysis
- CMS.301 Introduction to Game Design Methodologies
- CMS.608 Game Design
- CMS.612/21W.767 Writing for Video Games
- CMS.610 Media Industries and Systems: The Art, Science and Business of Games
- CMS.611/6.073 Creating Video Games
- CMS.617 Advanced Games Studio

**Games and Culture:**
- CMS.615 Games for Social Change
- CMS.616 Games and Culture

Courses taught by Comparative Media Studies | Writing

**Game Development Focus:**
- CMS.627/628 Imagination, Computation, and Expression Labs
- CMS.590/11.127/252 Computer Games and Simulations for Investigation and Education

**Writing/Aesthetics Focus:**
- CMS.314/21W.753 Phantasmal Media: Theory and Practice
- CMS.609/21W.764 The Word Made Digital
- CMS.845/21W.765 Interactive and Non-Linear Narrative: Theory and Practice
- CMS.S61/CMS.S97 Worldbuilding

**Human-Computer Interaction Design**
- 21W.785 Communicating with Web-Based Media
- 21W.789 Communicating with Mobile Technology
MIT Game Lab Network

MIT Collaborators

The MIT Game Lab works with programs and research groups in MIT to apply the institute’s innovation, technology, learning and assessment methodologies to games:

- Bernard M. Gordon-MIT Engineering Leadership Program
- Cambridge Science Festival
- AeroAstro SPHERES group
- Center for Civic Media
- Computer Science and Artificial Intelligence Lab
- MIT Lincoln Laboratory
- MIT Scheller Teacher Education Program
- MIT Engineering Systems Division
- MIT Humans and Automation Lab
- MIT Media Lab (Center for Future Storytelling, Personal Robots Group, Smart Cities)
- Open Documentary Lab @ MIT
- Mobile Experience Laboratory
- MIT Museum
- MIT Music Program
- MIT Professional Education
- Sloan Business in Gaming Conference
- Terrascope
- MIT Technology Licensing Office

International Collaboration

The MIT Game Lab collaborates across institutes and borders through its own network of researchers as well as the wider network of its parent department, Comparative Media Studies | Writing:

**MIT Game Lab collaborators**
- Singapore (GAMBIT, SMART)
- The Netherlands (William Uricchio)
- Denmark (TL Taylor)
- Sweden (Mikael Jakobsson)
- Austria (Konstantin Mitgutsch)
- Canada (Mia Consalvo)
- Visiting scholars from China, Taiwan, Brazil, UK, Norway

**Comparative Media Studies | Writing**
- UK, France, Germany, Iran (Kurt Fendt)
- Japan (Ian Condry)
- Italy, Brazil (Federico Casalengo)
- China (Jing Wang)

Industry Engagement

The MIT Game Lab has developed relationships with industry professionals at both the local and national level:

- Activision
- Dejobaan Games
- Bethesda Softworks
- Blizzard Entertainment
- Electronic Arts
- Fire Hose Games
- Hasbro
- Harmonix Music Systems
- Microsoft
- Owlchemy Labs
- Rockstar New England
- Turbine, Inc.
- Unity Technologies
- Zynga
- Weber Shandwick
MIT Game Lab Produced Work

Research

Presented and published 113 research papers.
Published, edited, or contributed to 19 books.
Presented at 55 academic and 12 industry conferences.

Awards

23 of our games have won a total of 39 awards as recognition to our contributions to innovative game development for multiple constituencies (mobile games, entertainment games, serious games, games for learning, games for research, games for health):

Boston Indie Showcase 2010 – Deearth (finalist)
Boston Indie Showcase 2010 – Waker (finalist)
Foundations of Digital Games 2013 Research & Experimental Game Festival – A Slower Speed of Light
Foundations of Digital Games 2013 Research & Experimental Game Festival – Movers & Shakers
Foundations of Digital Games 2013 Research & Experimental Game Festival – eMote
Foundations of Digital Games 2012 Research & Experimental Game Festival – elude
Games for Change ANZ 2012 – elude
Independent Game Festival 2012 – The Snowfield (student finalist)
Independent Game Festival China 2011 – Robotany (student winner)
Independent Game Festival China 2010 – Afterland (student finalist)
Independent Game Festival 2009 – Picopoke (finalist, Next Great Mobile Game)
Independent Game Festival 2008 – Backflow (finalist)
Indie Game Challenge 2011 – Symon (winner, Kongregate Award)
Indie Game Challenge 2010 – Waker (finalist)
Indiecde 2012 – A Closed World (finalist)
Indiecde 2011 – Improviso (finalist)
Indiecde 2009 – Akrasia (finalist)
Indiecde 2007 – AndiOdyssy
Indiecde 2007 – Backflow
Indiecde 2007 – The Vlogial Journey of Onez
Indiecde 2007 – Wiip
Indiecde 2007 – Revolution
Meaningful Play 2012 – A Closed World (runner-up, Most Meaningful Game)
Meaningful Play 2012 – The Snowfield (finalist)
Meaningful Play 2012 – Movers & Shakers (finalist)
Meaningful Play 2010 – elude (winner, Most Meaningful Game; runner-up, Peoples Choice)
Meaningful Play 2010 – Yet One Word (winner, Best Overall Game; runner-up, Most Meaningful Game; runner-up, Best Student Created Game)
Meaningful Play 2010 – Afterland (winner, Best Student Created Game; runner-up, Most Innovative)
Jay is Games Best of 2009 – Rosemary (nominated)
Jay is Games Best of 2008 – Akrasia (nominated, best game or interactive puzzle)
Serious Games Showcase & Challenge 2012 – Movers and Shakers (finalist, Mobile & Student competitions)
Serious Games Showcase & Challenge 2013 – A Slower Speed of Light (finalist, Student competitions)
Serious Play Conference 2013 – Phantomation (Best in Show)
Serious Play Conference 2012 – The Snowfield (Gold award, Student competition)
Serious Play Conference 2012 – A Closed World (Bronze award, Student competition)
MIT Game Lab Educational Outreach

Developed courses and taught 75 instructor-semesters for over 1000 MIT students.

- CMS.300/841 Introduction to Videogame Theory
- CMS.301 Introduction to Game Design Methodologies
- CMS.607/843 Theory & Practice of Player Research
- CMS.608/864 Game Design
- CMS.610/922 Media Industries and Systems: The Art, Science, and Business of Videogames
- CMS.611/6.073 Creating Video Games
- CMS.612/866/21W.767 Writing for Videogames
- CMS.615/815 Games for Social Change
- CMS.616/868/21W.768 Games and Culture (Social and Cultural Facets of Digital Games)
- CMS.617 Advanced Games Studio
- CMS.600/996 Special Topic: Casual Games and Casual Players
- CMS.600/996 Special Topic: Making Deep Games
- CMS.S60 Special Topic: Game Design for Expression
- CMS.S60 Special Topic: Unpacking “Super Serious” Serious Games
- CMS.S60 Special Topic: Games for Social Change
- CMS.602 Special Topic: Learning to play – playing to learn.

Mentored undergraduate interns and research assistants.

- 222 Singapore undergraduates and polytechnic interns (2008 – 2012)
- Employed undergraduates from EECS, CMS/W, Brain & Cognitive Sciences, Sloan School of Management, Math, Mechanical Engineering, Physics, Architecture
- Employed interns from Rhode Island School of Design, Berklee College of Music, Wellesley, Harvard, Northeastern University, Boston University, Massachusetts College of Art and Design, and Brown University.
- Advising and employment for MIT graduate students from CMS, EECS, Media Lab.
- Advising for undergraduate students in EECS (6.UAP), AeroAstro, Terrascope (1.016), and Toy Lab (2.00b).

Developed competitions.

- Boston/Cambridge site for Global Game Jam, hosted Januarys 2009 thru 2015
- Game jams hosted for the US Department of Labor and other organizations

Produced instructional materials for MIT OpenCourseWare, MIT TechTV, and EdX.

Developed and conducted workshops for external sponsors.

- National Film Board of Canada
- Harvard School of Public Health
- Weber Shandwick
- National Geographic Learning

Developed courses for MIT Professional Education, Short Programs.
Movers & Shakers is a unique two-player serious game that evokes meaningful conflict between its players beyond their tablet screens.

This serious game, designed by students at the MIT Game Lab, combines recent research insights into recursive and transformative learning with subversive game design elements and serious game design.

When players start the game, they are informed that the earth has slowed down and they need to manage lava sprites in the center of the earth to get the planet back on track.

The players need to cooperate to prevent catastrophe but are given no in-game elements to do so. Only by communicating with each other across the game will the world be saved.

Download for Android tablets at http://gamelab.mit.edu/moversandshakers

Movers & Shakers is used as a research tool to explore how a social component influences experiences in serious games.

Subversive game design elements are used to foster the players’ thinking process and to get them out of unquestioned routines.

Players are challenged to give up their prior egoistic goals to reach their common goal, to save the world. The game shifts from a competitive to a collaborational gameplay – but only once the players start communicating!

The MIT Game Lab is using this tool to explore the following cutting-edge research topics:

- How does the conversation about conflicting perspectives influence the game experience and outcome?
- How does the setup of the players influence their experience of the conflict with their opponent?
- What potentials and limits do subversive game design components provide to multi-player serious games?

Follow our research at http://gamelab.mit.edu/research/subversive
A Slower Speed of Light is a first-person game in which players navigate a 3D space while picking up orbs that reduce the speed of light in increments.

A custom-built, open-source relativistic graphics engine allows the speed of light in the game to approach the player’s own maximum walking speed.

Visual effects of special relativity gradually become apparent to the player, increasing the challenge of gameplay. These effects, rendered in realtime to vertex accuracy, include:

- the Doppler effect
- the searchlight effect
- time dilation
- Lorentz transformation
- the runtime effect

Players can choose to share their mastery and experience of the game through Twitter. A Slower Speed of Light combines accessible gameplay and a fantasy setting with theoretical and computational physics research to deliver an engaging and pedagogically rich experience.

Available now for PC and Mac!

http://gamelab.mit.edu/slower
Games and Their MIT Makers
Participatory games advance education.
By Nancy Duvergne Smith

The best modern video and online games do more than entertain. They also teach—and give players a say in how they learn. MIT is a pioneer in this participatory, games-to-educate approach, with a growing number of faculty and alumni leading the field. And students interested in this kind of gaming can tap MIT’s academic strengths, such as artificial intelligence, as well as industry savvy right on campus.

Playing to Learn
MIT is bolstering the educational value of games. The Education Arcade, a joint initiative between Comparative Media Studies (CMS) and the MIT Teacher Education Program is demonstrating the potential of video games that are fun to play and involve academic skills. Program faculty and students conduct research, bring the results to public attention, and produce lots of new games, such as Gung-ho! A Google Maps Adventure, a futuristic race that helps students learn U.S. geography.

CMS also offers courses such as The Art, Science, and Business of Videogames, taught by industry leader and Bethesda Softworks founder Christopher S. Weaver, SM ’85. Weaver is renowned for creating John Madden Football and for coining Weaver's Law of successful games: “The quality of entertainment is inversely proportional to the perception of time engaged in it.” That also holds true for serious games that can be used in education, medicine, and even combat training. “The key is the level of interaction a player can achieve with a particular game,” says Weaver.

CMS codirector Henry Jenkins III, the intellectual leader of this new-media renaissance, is a passionate advocate for the participatory culture that encourages players to be active learners and creators. “Game culture creates strong incentives for people to become active participants in the community, to create something, and to give something back,” he says.

MIT GAMBIT
Faculty and students are expanding our understanding of games in the Singapore-MIT GAMBIT Games Lab, established in 2006 with funding from the Singapore Media Development Authority. GAMBIT, which stands for “gamers, aesthetics, mechanics, business, innovation, and technology,” aims to accelerate digital-game research, develop a world-class academic program, and establish Singapore in the industry. Executive director Philip Tan ’01, SM ’03, is working with Jenkins and CMS codirector William Uricchio to help seed collaborations between MIT and three Singaporean universities.

Tan says GAMBIT is targeting a high-stakes industry growing because of a rise in online distribution and broadband connections, better word-of-mouth marketing, expanded audiences, and software advances. Emerging innovations in animation software, for example, could slash production costs.

“Singapore typically develops games with small groups of designers, the way the U.S. used to do,” he says. “Now in the U.S., large teams develop games over one or two years at a cost of as much as $40 million. If we can streamline the technology of how games are made, that will open up opportunities for small developers worldwide.”

Early Game Days
The history of computer-based games at MIT begins with the legendary invention of Spacewar in 1961 by members of the Tech Model Railroad Club, led by Stephen Russell ’60, SM ’62, EE ’66.
Another educational-gaming pioneer was Seymour Papert, a mathematician and artificial-intelligence researcher who, in the late 1960s, broke new ground in computer-based learning with Logo, the first programming language for children. At the Media Lab in the mid-1980s, Papert and Idit Harel Caperton, PhD ’88, both theorists of hands-on or constructionist learning, demonstrated how the act of creating new software games helps children learn.

"Children—and grown-ups—learn best when they actively engage in playful explorations of ideas," says Harel Caperton. She acted on that theory in 1995 by creating MaMaMedia, the first website to invite young children to create their own animated media and games. "My primary goal for MaMaMedia was to create an Internet business for teaching kids the three Xes—exploring, expressing, and exchanging ideas by using and sharing new digital media—through the first generation of participatory technology," she says.

**Industry Leaders**

As the industry swells—Americans now spend $7 billion annually on retail video games—MIT alumni are making an impact. The field's longtime leaders include Marc Blank '75, a co-designer of the popular text adventure game Zork, and Steven Eric Meretzky '79, who created such famous games as *The Hitchhiker's Guide to the Galaxy*, Black Ops Entertainment, cofounded in 1994 by CEO John Botti '90 and three other MIT grads, released the award-winning Knockout Kings series.

Game writer, producer, and consultant Sande Chen '92 is the coauthor of *Serious Games: Games That Educate, Train, and Inform*, published in 2005. She also leads Girls in Games, a nonprofit that encourages girls and women to enter the industry. In 2006, Next-Gen.Biz named her one of the industry's "Top 100 Most Influential Women."

And recent graduates are using MIT as a springboard into the industry. "I've known that I wanted to work in the games industry since I was 10," says Nick Hunter '06, a feature producer in Electronic Arts' Sims Division. "When I came to MIT I was very focused on that goal." At MIT, Hunter studied economics and literature and worked on Education Arcade projects. He also spent a summer interning at Electronic Arts.

**Do-It-Yourself Games**

Games are a growth industry in part because their audience has broadened beyond young men. Sabri Sansoy, SM '87, vice president of the Game Show Network (GSN), says the typical viewer of his company's television and Web programs is a middle-aged woman with an income of $60,000. GSN recently launched *Playmania*, the first live, participatory game show in the United States.

What's next? MIT's message about the value of engagement and learning is echoing throughout the industry. According to Sansoy, GSN will soon provide software modules that people can use to create and publish their own games. "That's what you'll see in the future—the YouTube of games," he says. "People will be creating their own."

**Connect with MIT Game Creators:** Subscribe to an alumni e-mail list for the industry, mitgamealums, at [alum.mit.edu/](http://alum.mit.edu/).

Copyright Technology Review 2012.
Today's Homework: Make Good Games

MIT professor Henry Jenkins is the accidental hero of video gamers. As the longtime head of MIT’s groundbreaking Comparative Media Studies department, Jenkins is a well-spoken, passionate advocate of the benefits of new media and popular culture. In a world where video games are excoriated by authority figures who say they rot our children’s brains, Jenkins is their highest-profile defender.

So when Jenkins speaks, the game industry listens. And right now, he thinks the business could use a dose of creativity.

"Studio-based production, across all media, has had two effects: ensuring a relatively high standard of production and capping opportunities for innovation and individual expression," Jenkins says. "As the costs of games get pushed higher and higher, many wonder where fresh new ideas will come from."

The fresh new ideas will be coming from the next generation of game designers -- and the schools that train them. As the medium expands to include everything from big-budget epics to viral, web-based minigames -- both of which can be highly profitable -- educators are creating a variety of new approaches to game design. Michigan State University is readying a master's program in "serious games." And a small digital arts college in the San Francisco Bay Area wants to teach budding designers how to tell stories, then train them in a pseudo-professional environment. And Jenkins and MIT want to create new game genres and turn them into commercial products.

The recently announced Singapore-MIT International Game Lab is a collaboration between MIT and the Singapore government’s Media Development Authority. Singapore hopes to create 10,000 new jobs in the digital media sector by 2015, and to that end will send its best and brightest to study at MIT -- about 30 to 40 undergraduate students each year, says Philip Tan, executive director of the lab’s U.S. operations.

Faculty, postdoctoral students and graduate researchers will all work together under the auspices of the lab to study game design and produce "a lot of games, somewhere between five and 10 each year," says Tan.

"The game industry isn't particularly fond of reading research papers from academia," but its leaders do pay attention to games, says Tan.

Jenkins says the university connection will foster greater innovation: "We see the lab as a space where we can move swiftly from pure research into compelling applications, and then partner with the games industry to bring the best ideas to market."

The Asian connection is also key. Games developed in Asia don't always translate well to Western audiences, and vice versa. "The next generation of game designers will need to be able to communicate in a global context and appreciate the cultural diversity that characterizes current game production," Jenkins says.

But what also characterizes current game production is a bleeding-edge, high-tech production process -- which even well-funded universities rarely match. Expression College for Digital Arts in Emeryville, California, kicked off a bachelor's degree program in game art and design this month, with an eye toward putting its students on the fast track to professional competency.
Expression's program is nearly indistinguishable from actually working in the business, says Spencer Nilsen, the school's president. "It's really a production company, as well as a school," he says.

Students use the same equipment as the pros, and work in the same type of environments -- in fact, if you didn't know any better you'd swear that Expression's campus was one of the Bay Area's innumerable digital production studios.

Expression's faculty is made up mostly of working professionals with years of experience at places like Pixar Animation Studios, Electronic Arts and Industrial Light & Magic. Nilsen is the former head of the music department at games publisher Sega.

Nilsen is a proponent of mastering the basics. Students who want to work with the school's million-dollar digital mixing boards must first learn to splice magnetic tape. Wannabe 3-D modelers are first put through "drawing boot camp." Designers get hands-on with old 8-bit gaming hardware.

"We want to know that if we took everything away and gave them a napkin and a pencil, they could get their ideas across," he says. "We want to make sure that students understand that the constraints of the system can sometimes spark creativity."

To get those juices flowing, every Expression student will collaborate with their peers to create a fully produced short film -- whether or not they want to work in the movies, says Nilsen. "It's stories that drive people's obsession with video games, whether they're playing on a handheld or a big screen. I'm hoping our students will get that," he says.

And some game designers have serious stories to tell. Michigan State University is gearing up to launch a master's degree course devoted entirely to the study of games with goals that go beyond pure entertainment.

Serious games are quickly becoming a seriously big business: $60 million a year, by some estimates.

The United Nations got the word out about its food-aid programs with a game called Food Force. Student-resistance leader Ivan Marovic is using games to teach strategies for nonviolent protests.

The university is currently seeking students to enter the program this fall, opening the program to candidates from such far-flung majors as journalism, museum studies and computer science.

Bringing together so many different disciplines is a challenge. While the power of serious games stems from their ability to reinforce a message or reward a desired behavior, putting together a successful game requires skilled designers and people educated in the science of learning, as well as the specific subject matter. And it's not always easy for them to work together.

"Everything the game designers would come up with," says professor Carrie Heeter, "the scientists would say was not good science. And then the scientists would say, 'What about this?' and the game designers would say, 'It's not a good game.'"

"But after a couple of years of working together, these people are going to be really great team members."

If Heeter and her colleagues are right about the power of serious games, the possibilities are endless. "In 25 years, my hope is that doctors will be as likely to prescribe a relaxation sleep game as they would an insomnia pill. I like that kind of a world."
The Best Schools for Gaming

The Top 10 Undergraduate videogame design programs and what makes them so great, as ranked by The Princeton Review.

1. University of Southern California
   Interactive Media Division, Computer Science (Game Development)
   Location: Los Angeles, CA
   63 Game-related courses offered this year
   71% of 2011 Graduates have worked on a shipped game
   Fun Fact: In addition to sponsored research projects, weekly seminars, and a class focused on networking and skill-sharing, the program also hosts weekly board game nights.

2. Massachusetts Institute of Technology
   Singapore-MIT GAMBIT Game Lab
   Location: Cambridge, MA
   50 Game-related courses offered this year
   100% of 2011 Graduates have worked on a shipped game
   Fun Fact: MIT’s program is very opposed to crunching, and helps students manage their time and not fear features, instead of working more than 8 hours a day on a full-time project.

3. University of Utah
   Entertainment Arts & Engineering
   Location: Salt Lake City, UT
   27 Game-related courses offered this year
   84% of 2011 Graduates have worked on a shipped game
   Fun Fact: Microsoft provided the school with a ‘full Xbox Lab.

4. DigiPen Institute of Technology
   Location: Redmond, WA
   262 Game-related courses offered this year
   85% of 2011 Graduates have worked on a shipped game
   Fun Fact: DigiPen is the only school in the world whose students have won awards in the IGF Student Showcase every year since the Showcase began (33 total).

5. The Art Institute of Vancouver
   Game Art & Design, Visual & Game Programming, 3D Modeling for Animation & Games, Game Programming BFA
   Location: Vancouver, BC
   100 Game-related courses offered this year
   80% of 2011 Graduates have worked on a shipped game
   Fun Fact: Over 772 students have graduated from The Art Institute of Vancouver in game-related programs, the second-most of any school on this list.

6. Rochester Institute of Technology
   School of Interactive Games & Media
   Location: Rochester, NY
   80 Game-related courses offered this year
   50% of 2011 Graduates have worked on a shipped game
   Fun Fact: 100 students in Rochester’s programs are supported by game-design research funding. The next closest on this list had 20.

7. Shawnee State University
   Gaming & Simulation Development
   Location: Portsmouth, OH
   42 Game-related courses offered this year
   65% of 2011 Graduates have worked on a shipped game
   Fun Fact: Shawnee was the only school on this list that saw 100% of its 2011 undergraduates take a job in some aspect of game development by the time they graduated.

8. Savannah College of Art & Design
   Interactive Design & Game Development
   Location: Savannah, GA
   70 Game-related courses offered this year
   64% of 2011 Graduates have worked on a shipped game
   Fun Fact: Savannah was one of only two schools on this list that teaches all 12 technologies. The Princeton Review asks about.

9. University of New Mexico
   Advanced Graphics Lab: Games Division
   Location: Albuquerque, NM
   15 Game-related courses offered this year
   80% of 2011 Graduates have worked on a shipped game
   Fun Fact: Students work towards creating an entire game, which must be completed and released to the public via platforms like Xbox Live and Apple’s iTunes Store.

10. Becker College
    BFA in Interactive Entertainment: Game Design & Game Programming
    Location: Worcester, MA
    22 Game-related courses offered this year
    20% of 2011 Graduates have worked on a shipped game
    Fun Fact: All of their gaming faculty have started, ran, or worked for a game.
The **Top 10 Graduate** videogame design programs and what makes them so great, as ranked by *The Princeton Review*.

**#1 University of Southern California**
Interactive Media Division, Computer Science (Game Development) Masters
Location: Los Angeles, CA
PhD: Highest degree offered
$75k mean base salary
*Fun Fact:* USC was one of the few schools that offers courses in all 17 fields of study surveyed for (and 3 more on top of that!)

**#2 Rochester Institute of Technology**
School of Interactive Games & Media
Location: Rochester, NY
Masters: Highest degree offered
$55k mean base salary
*Fun Fact:* 100 students in Rochester’s programs are supported by game-design research funding. The next closest on this list had 20

**#3 Massachusetts Institute of Technology**
Sloan School of Management Game Lab
Location: Cambridge, MA
PhD: Highest degree offered
$65k mean base salary
*Fun Fact:* MIT has the only graduate program on this list whose faculty all have PhDs.

**#4 University of Central Florida**
Florida Interactive Entertainment Academy
Location: Orlando, FL
Masters: Highest degree offered
$51k mean base salary
*Fun Fact:* One of the cornerstones of UF's program is working in teams. Grad students are paired up with other artists, programmers, and producers on their first day.

**#5 Southern Methodist University**
The Galleria at SMU
Location: Plano, TX
Masters: Highest degree offered
$60k mean base salary
*Fun Fact:* By the time they graduate, students will have a portfolio of at least three functional games.

**#6 Carnegie Mellon University**
Entertainment Technology Center
Location: Pittsburgh, PA
Masters: Highest degree offered
$55k mean base salary
*Fun Fact:* Over 500 students have graduated from CMU’s videogame design graduate programs.
G4U: The Singapore-MIT GAMBIT Video Game Program Wants To Teach You Game Design

You may have seen men and women in white lab coats under extremely large, orange banners from the Singapore-MIT GAMBIT Game Lab if you attended PAX East 2011. They were a contingent showing off the results of their collaborative efforts meant to promote and discover inventive directions in game design.

You may already be familiar with some of the Lab's work, but didn't realize it. *Cameyvale: Showtime* was released as an *Xbox Live Indie title* in 2006, and in 2009 was featured as part of PAX 10, which promotes the work of indie creators. Critics praised the game's polish and design, and a version was released in 2010 for Windows Phone 7 described as the platform's "early, lofty, benchmark."

*Cameyvale* is just one of four "featured games" on the GAMBIT website, but it's important to remember that the primary focus of the Lab is not commercial product, but experimentation. The first time I ever met a GAMBIT member was earlier this year in May, during the Games Beyond Entertainment conference held in Boston, MA. Lab Interaction Design Director Marleigh Norton gave a short presentation of an audio-only, single-button game she was developing. This sort of research is one of the Lab's primary mandates.

Students at the Lab are attempting to teach artificial intelligences how to portray characters and *play Civilization*, and studying the habits of *sports gamers*, for example. The Lab plays host to talks by game design
The faculty and staff on the US side of the project are an interesting collection of pure academics, video game industry veterans, and artists. Former employees of THQ, Dreamworks Interactive, and Irrational Games work alongside professors of comparative media and experts in interface research, among other fields of study.

The research conducted at the Lab is also eclectic. Looking over the list of publications, lectures, and graduate student those available on the GAMBIT website, there’s no unifying theme other than experimentation. Tan did identify a few specific areas of interest for the Lab. "Companies and players both have difficulty recognizing and dealing with online hate speech, and that's bad for game culture as a whole," he said. One of the projects presented at PAX East 2011 dealt with hate speech in the gamer community.

"Our perspective on games for learning and games for health is a little different from where [commercial video game] industries are currently invested in," Tan said. GAMBIT is also deeply invested in examining video games as cultural phenomena. The Lab publishes a bi-annual journal titled Eludamos, which seeks to discuss games through a wide variety of lenses including cultural studies, media studies, art history, sociology, social psychology, and semiotics.

I asked Tan whether he had seen any of the Lab's ideas incorporated into the video game marketplace. "I wouldn't claim that any current games or developers were directly inspired by our ideas, but there are a couple of trends that I feel we were slightly ahead of the curve," he said, identifying some of the Lab's many game prototypes, available on the GAMBIT website, which can be downloaded and played for free.

"I think we were doing auto-rigging of 3D characters before it became a standard industry technique [Phorum, Abandon]. One-button game design turned out to be pretty useful for mobile game development [ComayVale: Showtime,]

"Then there are our areas of research that are relevant to the industry, but still have a long way to go. We've been pushing game design for accessibility [
Unlike some of the organizations we're investigating during University Week, GAMBIT is not about a full course of academic study. "GAMBIT isn't a degree-granting program -- we're just a lab at MIT. However, we are housed in the Comparative Media Studies program, which offers a 2-year Masters graduate degree," Tan said.

"We generally see a lot of computer science and media studies students from MIT, with a smattering from the other departments," he said, but the Lab is open to students from other institutions as well. "We also have a lot of interns from Rhode Island School of Design, the Berklee College of Music, and Wellesley."

GAMBIT offers a wide variety of courses like Introduction to Videogame Theory, Game Design, Creating Video Games, Writing for Games, Games and Social Change, Media Industries & Systems, Computer Games & Simulations for Education, and Learning & Games.

In addition to their courses offered during the regular school year, the Lab hosts a nine-week, intensive game development experience called the Summer Program. Groups composed entirely of summer interns, led by the staff of the Lab, create games from start to finish that incorporate research elements that suit the needs of clients drawn from the local research community.

The Summer Program was the genesis of Symon, a browser-based game that won the Best Browser Game category at the 2010 Indie Games Challenge. Symon is a point-and-click adventure/puzzle game about the dreams of a paralyzed man, and is different every time it's played. This is accomplished with procedural puzzle generation, or computer algorithms that take various pieces and assemble them to make new content on the fly. You can try Symon for free on Kongregate.
I asked Tan what would best prepare students to get the most out of the courses offered by the Lab. “Successful grad applicants to Comparative Media Studies come from a pretty wide range of backgrounds, but all of them need to demonstrate pretty impressive writing and analytical skill,” he said. “That can come from an undergraduate degree or from work experience; many applicants are folks who have already worked a few years in media, including the game industry.”

Finally, I asked Tan where former members of the Lab tend to go once they’ve finished their studies in the program. He told me that local Boston studios like Harmonix Music Systems, Irrational Games, Demiurge, and Fire Hose Games were all attractive for Lab alumni. “Of course, a lot of folks also now work outside Boston, with some going into R&D,” he said, with companies like Electronic Arts, Activision, Microsoft, Zynga, Google, NVIDIA, and Disney.

Fire Hose Games in Cambridge, MA was founded by Eitan Glinert, an alumnus of the GAMBIT Lab. His studio’s first game, Slam Bolt Scrappers, became a PlayStation Network exclusive after grabbing the attention of the video game press at PAX East 2010. I asked Glinert how his time at the Lab prepared him for the realities of running a game development studio.

“GAMBIT was pivotal in my decision to start up Fire Hose Games. People there pushed me to go and implement the games I felt were worth making, never once saying ‘that’s a stupid idea,’” Glinert said. “The summer crucible in which we made games in 2 months helped teach me development scoping and gave me a greater understanding of the reality of production. They also helped me build the connections and network I would later call upon when I needed help with my fledgling studio.”

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Seminal computer video game Spacewar lives again

MIT creates a simulation to celebrate the 50th anniversary of Spacewar. A relic of the early days of minicomputers, it was one of the first computer video games and set the stage for many others, including Asteroids.

by Martin LaMonica | February 11, 2012 4:00 AM PST

Dan Edwards (left) and Peter Samson playing Spacewar on the PDP-1 display. Edwards and Samson made significant contributions to the video game before it was released in 1962.

(Credit: Computer History Museum)
CAMBRIDGE, Mass.—In its typically geeky fashion, the Massachusetts Institute of Technology celebrated the birth of one of the first video games by challenging students to re-create it on a computer the size of a business card.

MIT engineering students and faculty this week showed off a simulation of Spacewar on campus and at the MIT Museum to mark the 50th anniversary of the video game's release. Written by four students in their spare time, the video game influenced how many later games were designed and was part of a broader shift in how people viewed computers.

Spacewar, created on Digital Equipment's PDP-1 minicomputer, was instrumental in showcasing the graphical capabilities of computers and new modes of user-computer interaction. It also helped showed people that computers could be used for fun, not only serious work.

**Video game Spacewar reborn at 50 (photos)**

MIT gained access to a PDP-1, a refrigerator-size "minicomputer," in the early 1960s and gave students regular access to it in MIT's Kludge computer room. That arrangement of letting programmers tinker with the computer during the machine's downtime helped seed the hacker culture that later flourished, according to the Computer History Museum.

"The PDP-1 had enough downtime that people could mess around with it, which was different from the IBM mainframes, where every second was used," said Phillip Tan, U.S. executive director of MIT's GAMBIT game lab, who oversaw the simulation project. "It allowed for people to experiment and use it for playful stuff."

The first version of Spacewar was written by Steve Russell, who was inspired by pulp science fiction novels and the space race of the time. Significant improvements were later made by Peter Samson, Dan Edwards, and Martin Graetz, and in the spring of 1962, the programmers made the game available to Digital Equipment users for free. Later it was loaded onto PDP-1 computers and used to show customers that the machine was working.
The game itself helped establish some of the constructs of later games. Two players operate controls to navigate a spaceship and shoot torpedoes at each other. Later the "hyperspace" feature was added—which let players try to avoid danger by having their ship vanish and reappear randomly elsewhere on the screen. People familiar with the arcade classic Asteroids, a single player game, would quickly feel at home with Spacewar.

But there's a significant difference between Asteroids and Spacewar, which reflects a scientific approach the MITers took to computer games, Tan said. When playing Spacewar, gamers need to contend with the force of gravity as their ships are pulled toward the sun in the center of the screen. When players get good, they can approach the sun and, with the right thrust, get a slingshot effect and fly off.

The physics of the gravitational force are accurate, reflecting how many MIT programmers wrote simulations of real-world phenomena, Tan said. (The other stars on the screen, which were hard-coded and depicted the evening sky at MIT, don't exert gravity.) Originally, the game was controlled from buttons on the computer itself, but since the porthole-like monitor was not directly in front, people created separate controls so they could see better while playing, Russell explained in an interview last year.

**Digital archeology**

To create a simulation of the game for people to play today, MIT students got hold of the source code of the original Spacewar and ported it to the cheap Arduino electronics platform, which is typically used for hardware prototyping.

The Arduino microcontroller, which fits in the palm of a hand, has roughly the same processing power as the original 18-bit PDP-1, said Owen Macindoe, a graduate student at MIT's Computer Science and Artificial Intelligence Lab, who worked on the porting project.

One of the biggest challenges was simply decoding the original source code, which was essentially "digital archeology," Macindoe said. Spacewar was originally written in the assembly language of the PDP-1, a significant difference from today's abstract languages that are a buffer between programmers and machine-level commands.

"It was very hard to recognize from modern programming languages because it was so low level and it used a lot of machine-specific tricks which they had to because of the limitations they had," Macindoe said.
Because there was little memory, programmers didn't have the luxury of reserving a block in memory for images of the space ships. Instead, they had to write step-by-step instructions in the program on how to render them at runtime. "It was pretty weird," said Macindoe. "But it was exciting when we figured it out."

Porting the program posed other challenges in re-creating quirky features, such as certain conditions where torpedoes from one ship would pass right through the other.

Spacewar was eventually turned into an arcade game and a home video game. But it was never the huge hit that successors such as Asteroids were, partly due to controls that were relatively complicated for the time, Tan said.

On the other hand, the basic setup of having two opponents with separate controls shooting at each other continues to this day. And as many MIT students found out this week, Spacewar is fun to play, too.

Topics: Computing Tags: Spacewar, video games, MIT
Cold, Comfort, Harm: The Snowfield

By Adam Smith on January 26th, 2012 at 2:10 pm.  

It’s quite warm here this morning for the first time in days and I was dangerously close to enjoying the sun’s gentle caress, which would be a terrible betrayal of mistress moon. Thankfully I keep a stock of chilly and chilling games behind glass for just such an eventuality and today I’ve broken out The Snowfield, from brainy chaps at the Singapore-MIT Gambit Game Lab, whose output we’ve covered previously. This third-person adventure runs in browsers through the magic of Unity and it’s quite conventional to play in some ways, though shot through with atmospheric and narrative weirdness. Best to play it rather than listen to me, or read a little more in the icy depths below.

In The Snowfield you are a lone soldier wandering the aftermath of a great battle. It is the dead of winter and you won’t last long in the cold. But you are not alone.

There you go. Survival is the task – survival from the cold and perhaps from whatever it is that’s keeping you company out there. Or perhaps not. You’ll have to play for yourself because I’m not spoiling that. What I will say is that snow has rarely felt more like the ashes of the dead. It’s all a bit grym and unsettling.

Occasional graphical glitches detract from the well-worked aesthetics, although thinking back I’m not entirely sure they’re not intentional, though the experimental part of this experiment is in the design process rather than the style of play.
The Snowfield represents an attempt to make a simulation-based narrative game according to a special method for developing such games, a method designed to avoid the need for complex A.I. or massive content generation. The idea was not to relying on codified narrative theories or formulas – like three-act structures, etc. – but rather assume “what makes a good story” cannot be systematized and instead must be arrived at organically via extensive user testing.

What this appears to boil down to is creating a series of objects, characters and tableaux loosely tied to a theme, and then allowing people to interact with them in isolation, observing and studying the reaction to each element. With that feedback, the features are stitched together into a whole, which is The Snowfield. In a way, it seems like a form of improvisation based around spectator feedback, except with the elongated timescale necessary for game development. Maybe there’s a connection to Sleep is Death in the thinking, although with a radically different approach?
I've enjoyed exploring this shell-shocked space but it's hard to know exactly how "inverting the traditional relationship between Design and QA" has impacted on the process. Maybe it's for the best if the design process doesn't intrude on the player's experience, like some sort of invisible guiding hand, but I am the kind of man who would unpick the threads on the whole world if he could find a loose end. **Wander the snows. Seek the threads.**
Game puts artificial intelligence in the mind of the beholder

What if developing certain kinds of AI didn’t have to be so laborious?

Andrew Whitacre
Singapore-MIT GAMBIT Game Lab

October 31, 2011

When it comes to programming video-game characters to act realistically in response to ever-changing environments, there is only so much current artificial intelligence (AI) can do.

Even skilled AI programmers can devote years to a single game. They have to consider all the events that might occur and map out characters’ possible reactions: In a first-person shooter game, for example, the AI-controlled character needs to know how to collect ammunition, seek his target, get within firing range and then escape.

What if making certain kinds of AI didn’t have to be that laborious? What if an algorithm, extrapolating from a few decisions made by players, could figure things out for itself — and even reuse those lessons from one game to the next?
And what if all this could be done by someone with no AI training at all?

“Robotany,” a game prototype from the Singapore-MIT GAMBIT Game Lab, wants to answer those questions.

Set in a garden, the game features small, robot-like creatures that take care of plants. The player manipulates graphs of the robots’ three sensory inputs — three overlapping AIs — and these manipulations teach the AIs how to direct characters in new situations.

- **Play Robotany**

“The scheme behind Robotany requires that we ask the user to describe what the AI should do in just a few example situations, and our algorithm deduces the rest,” says the game’s product owner, GAMBIT Game Lab’s Andrew Grant. “In essence, when faced with something the user hasn’t described, the algorithm finds a similar situation that the user did specify, and goes with that.”

The game was developed as part of GAMBIT’s eight-week summer program, which brings together young artists, programmers and project managers from U.S. and Singaporean institutes.

Robotany’s 11-person team pushed game research in a unique direction by taking advantage of the human brain’s ability to identify patterns.

“With our approach,” Grant says, “we can drastically reduce the number of examples we need to make an interesting AI, well before you’d traditionally get anything good.”

Game director Jason Begy adds, “The player can effectively give the characters some instructions and then walk away indefinitely while the game runs.” Other AI developers are enthusiastic about this new approach.

“Robotany represents a great new direction for game AI,” says Damian Isla, who was the artificial intelligence lead at Bungie Studios, makers of the “Halo” franchise. “The AIs’ brains are grown organically with help from the player, rather than painstakingly rebuilt from scratch each time by an expert programmer.”

MIT Media Lab researcher and GAMBIT summer program alumnus Jeff Orkin says solving this kind of challenge would be “one of the holy grails of AI research,” since the video game industry spends an incredible amount of time and money micromanaging the decisions that characters make. “It would be a boon to the game industry, as long as the system still provided designers with an acceptable degree of control,” he says.
The Robctany team, honored as a finalist in the student competition at the upcoming Independent Games Festival, China, also included producer Shawn Conrad of MIT; artists Hannah Lawler of the Rhode Island School of Design, Benjamin Khan of Singapore's Nanyang Technological University and Hing Chui of the Rhode Island School of Design; quality assurance lead Michelle Teo of Ngee Ann Polytechnic; designer Patrick Rodriguez of MIT; programmers Biju Joseph Jacob of Nanyang Technological University and Daniel Ho of National University Singapore; and audio designer Ashwin Ashley Menon of Republic Polytechnic.
I was recently pointed in the direction of Symon, a free experimental point and click adventure from Singapore-MIT's game laboratory, Gambit. The idea behind it is to see if it's possible to create a procedurally generated narrative adventure, with unique puzzles. Which is quite an ask. The results, they're an interesting combination of cheats and potential.

You play as a man paralysed in hospital, presumably dying. And from this perspective, you are naturally in fairly sad territory. Each adventure you generate is a dream, and as such embraces dream logic. And there's where the clever cheats come in. Each time you play, and I've played it through six times now, it not only combines together a different collection of scenes, but also a different selection of puzzles using a small set of objects. There are also three main scenarios it picks from, mixing things up further, although for each you're gathering three objects that represent memories from your past, gathered for a version of yourself in a hospital bed within the dream. Following me so far? Good.
Each location has two impossibly standing doors, linking them altogether, a final door not unlocking until all three objects have been collected. And to get them, it’s a fairly elementary inventory puzzle situation. Some girls with a balloon want a sad storybook, but the one you’ve found is cheerful. So you apply dream/adventure logic and click it on some bitter water in a sink. The combination creates a morose storybook, and the girls reward you either with another item used in a similar way elsewhere, or one of the three memories.

Next time you play, they may want a happy story, or some bitter chocolates, or they may not be there at all. Then repeat that idea for five or six locations, and you’ve got something approaching a unique situation each time you play, albeit with extremely similar motifs each time.
The result is mixed. The first time through it’s an interesting experience, a very short, novel adventure, where dream logic makes for an interesting twist. The second time you’re impressed at how different it is. And the third all you can see is the matrix. There also appear to be some issues with its letting you go down blind alleys, perhaps turning some roses blue before realising you need them red, and having no way back other than restarting. Restarting five minutes’ play admittedly, but it’s still a bit crap to do that. But what it does reveal is a great deal of potential. The internal ‘logic’ is consistent, and if the idea were taken much further, with far more scenes and a vast number more variables, you could end up with something that’s genuinely generating a playable experience that would be utterly unique each time. However, as I mentioned before, dream logic allows quite a lot of cheating in design. It’d be interesting to see if it were possible to create something that didn’t rely on such obscure combinations.

As a prototype, Symon is really exciting. And as a game itself, it’s a surprisingly emotive vignette those first couple of times through. It plays neatly in a browser, although while the music is absolutely lovely, there’s no flipping way to shut it up when you’re in another tab.
Bit of a Rebel: Clara Fernández-Vara

This is the fifth article in the series *The Academics Are Coming.*

Clara Fernández-Vara is a researcher for the Singapore-MIT GAMBIT Game Lab and much of her research is focused on the integration of story and gameplay. She has been involved in the development of several games through her studies.

She’s written an interactive fiction, *Ariel,* based on Shakespeare’s *The Tempest,* but the bulk of her work concerns point-and-click adventuring. *Rosemary* (2009) adopted the “remembered past” as a mechanic (previously featured on Rock Paper Shotgun). *Symon* (2010) explored procedural generation in the adventure space using dream logic to sweep any narrative problems under the carpet (flagged on RPG just yesterday). The follow-up to Symon was *Stranded in Singapore* (2011) which aimed to standardize the procedurally-generated approach.

Fernández-Vara talked to Electron Dance about her work, what she loves about developing academic games and how research should not be constrained by the concerns of industry.

HM: Clara, there is still much scepticism regarding the value of academic research so... why become a game studies academic?

I was already on the academic track; I started my PhD in English and American literature in Soeĩn to study Shakespeare on film. At first it was a secondary interest, tracing the similarities between traditional fairytales and videogames, particularly arcade games. Literature gave me the excuse to rediscover games, because literary theory helped me understand them in a new way.

Then I came to the US to study media studies at MIT, where I was surrounded by people studying comics, Bollywood movies, radio production; games were one more topic in the mix. I also started to hang out with people like Jesper Juul and my colleagues at the Education Arcade, who were games researchers and developers. Talking to them, I realized that there was so much to learn; that game studies was a vast field, mainly unexplored. My background in literature, and mostly on studying texts in performance, had provided me with good tools to gain important insights. I felt like I could make a contribution, which is essential to be a scholar. Making games was also very attractive–if I was part of theatre productions as a theatre scholar, it seemed natural to participate in production to understand my field of study better.

I’ve realized I just changed the subject of study, from theatre and film to games, and brought all my methods along. I focus on story-driven games because of my literary background, and work on adventure games because it is one of my favourite genres, and I know how to design and program them best. So basically I wanted to stay in academia, having a subject of study that was challenging and engaging. Although I have less resources than I’d have working in the industry, staying in academia gives me the liberty to make games about themes and using mechanics that commercial games would usually not tackle.

As for some people’s contempt towards games scholarship, it’s not something I’m too worried about. One of my teachers in Madrid frowned on me when he heard I wanted to study games, he said it was “a waste of time” and that I should stick with Shakespeare. I think he was one of the reasons why I study games--I wanted to show him and others that games are not only a very valid field of study, but that by understanding them better we can make the expressive possibilities of games thrive. Plus I’m a bit of a rebel--whenever a teacher told me I should stay on the beaten track to succeed, I promptly ran the other way. So fair, it’s worked pretty well for me.
**HM: How would you define your role on Rosemary, Symon and Stranded in Singapore?**

As a researcher working with student teams, my role is first explaining what my research is and what I’m trying to learn from making the game. I guess that in industry terms I’m closer to a creative director. I start by explaining my design philosophy to the team, and my focus on exploration and world building, on letting players discover the world and make sense of it. There are certain design choices that I usually make beforehand, such as what type of adventure game we are making, or the topic of the game, e.g. the core mechanic is remembering, or the game takes place in Singapore. The students have ownership of the game too—its not made on spec, but rather is the result of the collaboration of the whole team. I'm leading the orchestra, but I cannot play alone.

Rosemary was the game where I had the most hats—I was the producer, and also contributed to the design and writing of the game. In Symon and Stranded in Singapore I was a bit more of a client and had a game director (Jason Beene for Symon, Rik Eberhardt for Stranded in Singapore) who helped me interface with the team. It makes my life a bit easier, because they deal with things like scheduling and mentoring the students on game development practices, and allows me to focus on the design of the game and how it addresses what I want to achieve. But I love working with students, so in both cases I still worked closely with the designer and the rest of the team.

It is always tricky working with teams of students, because on the one hand the game is supposed to help me with my research, but on the other, they are learning. They are going to make mistakes—and they should be allowed to make mistakes every now and then. I have not completely figured out the process, but I have to say I love the energy of working with undergrads. I need to get my hands dirty along with them, because I also learn a lot from the team.

It's also a great way of putting my theories to the test, since I have to explain my philosophy and research to them and make it clear.
HM: What was the motivation behind these projects? Were they experiments or demonstrations of theory?

They are definitely experiments because the goal is exploring the process. Even when the game or prototype does not quite come together, I still learn from making it. My theories are frameworks to understand games and to formulate specific problems; at times the goal of the game is to subvert them and put them to the test. The validation comes from releasing the games to the world and getting people outside the academic realm to play them. My goal is making games that are different, novel, and engaging; having people play them without realizing that they are research games shows that what I do is relevant and useful.

My general goal is to experiment within the adventure game genre, questioning preconceptions and looking for ways to innovate. I focus on them more as games, and how to bring together gameplay and story. Rosemary was a general experiment—at that point, I wasn’t sure we could make a short adventure game with the resources we had at hand. The experiment was bringing new mechanics to adventure games—could we make a game where the core mechanic was remembering? What was the process?

Symon is an example of a design question that can take you to findings in a variety of fields. The premise at first was questioning my own theories—I argue that narrative puzzles have to be set up in a world that is consistent, that creates expectations, so that when the player encounters the puzzle, she can solve it according to the logic and affordances of the world. For example, in the game Loom the player interacts with the world through musical spells, which are learned through exploring the world. So I poked at my own theories: can we make a game based on a dream world, an unstable place where the logic doesn’t quite make sense. We all know the feeling—what we do while dreaming makes perfect sense to us, but sounds crazy when we think about it what we’re awake (if we remember what happened).

After some experimentation and prototyping, one of the approaches that seemed the most promising was creating procedurally generated puzzles, first because it would provide that sense of instability. It was also a promising design solution: the puzzle generation system would have to model the mind of whoever’s dream the player is in. It also opened up a really exciting avenue for innovation in adventure games, since procedural generation would make the game replayable. There were several prototypes on the topic as preparation and Symon was the demonstration of how it would work.
From Symon, we learned that procedural generation created a new type of adventure game: shorter but replayable, where the player figures out the world through several playthroughs. The problem was that the designer did not have good tools with which to create a procedurally generated adventure game and it took very long. So the next step was developing those tools and putting them to the test making another game. For that game, I posed an extra design problem—the randomness of the procedural generation works well in a dream setting, but could we use it for games based on the real world? Otherwise, our tools may only be good to create dream-like games.

The process of development of Stranded in Singapore addressed that question: the tools worked quite well but the design, however, was more difficult because we were simulating aspects of a real place (Singapore) and not everything fits in a procedurally generated design. It was lucky that food is an important part of Singaporean culture, and that fits well, but it was a hard constraint, and not all of the puzzles work well.

In spite of this, my focus is not on procedural generation, but rather in the conceptual design. One of my students is extending the development tools for his Master’s thesis in Computer Science. My research focuses on finding the problems and creating solutions, and reflecting on the process—if in the process there are other pieces of research that can advance other fields, like computer science, that’s great, it’s the beauty of working in an interdisciplinary field like games.

What I’ve learned too is that as a researcher it is easy to constrain yourself too much, and that what may be good research may not result in the best game and vice versa. On top of that, teaching is also part of the process. Right now, I’m rethinking my methods, trying to figure out what fits my background best, what is the most satisfying process professionally, and how can I learn the most. I may have been trying to be too scientific about it and I’m mainly a humanist. So I’m looking at models of theorist practitioners in other media to learn more about their process, such as Eisenstein or Truffaut in film, or Anthony Burgess in literature, to look at how they combined their theories and criticism with the works they produced.

HM: In your view, how much impact does game studies have on the world of game development?

Not all of game studies work is going to be relevant to industry and it does not have to. As academics we need the liberty to explore our field. Research does not always have to be at the service of industry. From the humanities standpoint, game studies helps us understand games better, and some of those insights may be superfluous to developers. Same with technological research (a novel technology may not be feasible to commercialize) or the social sciences (studying defunct online communities) where the research is excellent and advances knowledge, but may not have an immediate impact outside of academia. I have chosen to make my work relevant to practice but not everyone has to, and I’m well aware that only some aspects of my work can be made useful to developers.

My friends in the industry very rarely read papers from academic conferences or journals, mostly because they do not have time. Papers are not the most efficient format to influence the industry, so we have to find other ways to communicate. One way would be having some more academics presenting at industry conferences. Until a couple of years ago, there was a GDC session called Game Studies Download, which provided a selection of papers that were relevant to the industry; we need something like that back, for example.

As academics, we need to realize that if we want the industry to hear us, we have to make our work accessible to them. We can write a paper for Game Studies, but we can also have a more accessible version in our blogs; not dumbing down our work but rather being careful with how we use jargon, for example, or thinking about how our research helps understanding games better. We cannot go into a room of developers and read a philosophical debate on the misunderstandings about Huizinga’s and Caillol’s work, which makes for a great session in a research conference like DIGRA, but would reaffirm the general scepticism that the industry already has towards academics. Making games is another way to gain some respect from industry—if you can link your theory with your game, it’s more likely that they’ll pay attention. Developers may not read papers, but they do play games.

I believe that the influence of game studies in the industry is barely visible now, but it’ll be more prominent as the field grows and more game studies academics teach people who later go into game development. It’ll also be more prevalent in smaller companies than in AAA companies where the contents may still be more controlled by publishers and big money. So I believe we’re getting there.
HM: Could you be tempted into larger projects with more commercial aspirations?

I keep saying that if I can deliver a game in eight weeks and a team of students who are new to development, then I’d be on fire if I could get to work for four months with a team of professionals. My goal is to be relevant, so applying what I know to larger commercial products would be a fascinating challenge and I would learn a lot from it. I’d love to have access to more resources, and face the challenges of bigger games.

One of the first things that I have to think of when making a game is my target audience, because they are the ones who will be making sense of the game. So far my goal has been to appeal to relatively niche audiences; reaching out to more people would be an interesting problem to tackle. I’d love to make a game that reaches larger audiences, and see what people do with them—that’s the biggest kick I get from making games as part of my work.

On the other hand, I’d be more worried about working on a commercial product where my creative input is exclusively at the service of what some marketing department or team of executives thinks would sell, making clones of other successful games. So making larger experimental games for the market may be a fun challenge; a humongous game cash-in is not worth my time.

HM: Thanks for talking to Electron Dance, Clara.
A CLOSED WORLD

IT'S RARE TO SEE GAMES WRESTLE WITH COMPLEX, AND PERHAPS CONTROVERSIAL, SOCIAL ISSUES. A CLOSED WORLD, WHICH COMES FROM A TEAM OF RESEARCHERS AT THE SINGAPORE MIT GAMBIT GAME LAB, DOES JUST THAT, AND OPENLY EXPLORES LGBT AND QUEER THEMES IN A JRPG FORMAT. IN THE GAME, PLAYERS TAKE CONTROL OF A YOUNG PERSON WHO DECIDES TO ENTER HIS VILLAGE'S FORBIDDEN FOREST ALONG THE WAY, THE PROTAGONIST MUST BATTLE INTERNAL DEMONS THAT QUESTION WHAT WE CONSIDER "NORMAL" AND WHAT IT MEANS TO BE TRUE TO ONESELF. WE SPOKE TO PRODUCER TODD HARPER TO LEARN MORE ABOUT THIS INTROSPECTIVE TITLE.

Tom Curtis: Where did the inspiration for A CLOSED WORLD come from?
Todd Harper: Last September in 2013 there were a number of queer youth and bullying victim suicides in the news, including the story of Tyler Clementi. The mission of GAMBIT, the lab where I work, is to use game design to do research, and my background is both in game studies and queer theory. So I thought, "How would a game deal with talking about stuff?" The eventual end product didn't have all that much to do with that issue (though I hope to come back to it someday), but that was part of the spark. Another influence was a story in the October issue of Edge magazine called "Playing It Straight" [www.next-gen.biz/ features/playing-it-straight/]. That dealt with the question of where all the LGBT/queer content in games was. A lot of inspiration came from reading some of the reasons the people they spoke to there gave and going, "Alright. So how can we overcome some of this?"

TC: To what extent did the team draw from personal experience when creating the game?
TH: This is a difficult question to answer. I know my own past experience went into discussions I had with the team about things like coming out and issues like that, as did one of the interns who identified as gay. I don't think that the game's content came as much from their actual personal experience as it did from the team making a big effort to come to grips with what the issues involved with being a queer person are. They spent a lot of time in the first few weeks just brainstorming and sharing ideas about what that meant. The room they were in at GAMBIT has a glass wall that can be written on with dry erase marker. The team drew this amazing brainstorming thing that was dubbed the LGBT Spider, and it took up the entirety of the eight-foot high wall by the end of the project, having morphed into the LGBT Kraken. There's this big, amorphous concept of "the LGBT experience," that they—like any other dev team—had to wrap their heads around. We did a lot of mapping onto situations they did have experience with, and I think that worked out well.

TC: In general, how have audiences responded to the title? Were you surprised by how people reacted?
TH: Responses have run the gamut. There are players who really like everything, from story and gameplay on down. There are those who thought the gameplay was too simplistic, and the story was too cliche. And there's a lot of middle ground, which is the most common.

In all honesty, the title of responses and coverage did take me by surprise; I expected a few mentions here and there, and that was all. But I think that sudden outpouring of interest says a lot about whether this was worth doing, and if it's worth it for other devs to try. I think it is. There's clearly a desire and an appreciation out there that needs to be addressed.

TC: While the team seems to openly acknowledge A CLOSED WORLD's underlying themes, the game itself is fairly subdued and ambiguous. Was this a conscious decision or the team's part?
TH: I'd say so. We had this constant battle with what we called "the hammer," where we came down with some top-heavy, word of God message about LGBT theme here. Nobody likes that in a story or a game. Plus, our biggest concern was this procedurally generated gender concept, where the genders of the people you meet [and in the backstory] are just picked for you at random. So, we needed a narrative that supported that, but that still get across the message we wanted to send, which is this...
idea that being true to yourself is hard, and might require sacrifice, but in the end is a much better option than the alternative.

**TC:** The game seems to focus more on its themes and message than it does gameplay itself. Why did you choose to emphasize narrative so heavily over the mechanics?

**TH:** Before the summer we had a six-month prototyping period, where we worked over various ideas about the shape of the game. At first we really wanted to do all the work in a procedural way. We spent a lot of time looking at various parts of what a queer individual’s experience might be and saying “Okay, how can we turn this into a gameplay mechanic?” The real problem is we couldn’t find one that was satisfying to us, and part of that was really just the huge amorphousness of grasping “a queer experience” in the first place.

Gameplay, a procedural thing, is about modeling ideas through (among other things) a system of rules ... but if we didn’t have a compelling notion of “a queer experience,” it’d be difficult to find a core mechanic that could express one. A question we constantly ask ourselves was “How do you establish a character, or a theme, or an idea as ‘queer’ using primarily gameplay?” The answer we came to was that we couldn’t ... not in the time allotted, anyway. So in the end, we decided to let the narrative do the heavy lifting, ideologically speaking, and tried to focus on having the gameplay deliver and reinforce the narrative.

**TC:** If you were able to go back and do one thing differently during the game’s development, what would it be?

**TH:** I’d come into the process having already worked out the raw mechanics of our combat system. I think developing the combat took a really huge amount of our very limited time, and a lot of it was fine-tuning and tail-chasing of ideas that were inevitably scrapped for the sake of simplicity. The problem was that dealing with that “queer content” issue I described was also a time-consuming thing, and we couldn’t set the story down until we had it resolved, and the later we settled the story, the more stress went onto coders and art/music asset creators both. I think if we’d had combat more or less settled and had more time to work on the game’s portrayal and packaging of the story and message, we could have added some additional nuance to it in the end.
This week’s best free PC games

Lewis Denby at 02:00pm October 2 2011

Two of this week’s free PC games deal with sensitive subject matters, and while one is more successful than the other, both are worth a look for being confident enough to stray into territory that games rarely touch. If you need a bit of light relief after these titles’ heavy themes, though, there’s a lovely hand-drawn platformer and a high-octane, 2D version of Prototype to get stuck into as well. Read on for this week’s picks...

A Closed World

GAMBIT: Play it on the [GAMBIT website](#).
A Closed World is a simple JRPG-style adventure about what life can be like if you are homosexual. That's quite a rare thing in games, and I could probably reel off an entire column's worth of words on that alone. In this heavily metaphorical game, you venture into the woods to battle demonic versions of those who've caused you trouble in real life: your family, your partner's family, and your partner him/herself. After each face-off a beautifully drawn cutscene plays out, advancing the story as it does.

I'm not sure how I feel about the way that the theme is dealt with, so I don't want to talk too much about that. I'll just say that I'm glad a game has chosen to tackle this subject matter, and that I hope others will go on to tackle it in a more interesting manner. I also hope another, similar game comes along which is A) slightly longer, and B) more invigorating to play. You can get to the end of A Closed World in just a few minutes, even though it feels more epic in scope than a short-form title, and none of the battles are remotely challenging. Perhaps that could work as a statement itself, although I'm not sure it's the statement the game is trying to make.

Wandering around the woods between fights yields very little of intrigue, which is a shame. But this is still worth playing. After all, it's a game about what it's like to be a gay person in a heteronormative world, and I'm not sure there are any other videogames about that.
Bytten Ernie Awards 2012

Special Award - Improviso
I was tempted to place this one in the Strangest Game Experience category, but that one was already hotly contested and Improviso warranted special mention. I didn't get the full experience I needed to enjoy it properly, as this is a game that requires more than one person - and, like The Restaurant Game before it, this game is a social experiment. Two people take on the roles of Director and Lead Actor, and make a movie. A pretty hokey sci-fi B-movie, and one filled with cardboard props.

Despite only having myself in the game, I had a good chance to look around. The detail is impressive - objects can be manipulated, special effects can be used, a range of sets are available and there are over a dozen possible "scripts" to go through. I hope MIT managed to get some useful data from their experiment. It was clearly a lot of work!

Read on for Steve's choices for the Bytten Ernie Awards 2012.
IGF 2011 Review: Elude by Birdy Inc.

When video games first came into existence, they were about getting together and having a good time. Along the way, as the gaming medium has evolved, games have also become effective tools to educate players and communicate greater messages.

Elude is one of those games that is less about the gaming experience and more about trying to create an awareness in people that they may not have had before.

Elude, from developers Birdy Inc., is a serene platforming title that centers around teaching people about depression. The developers note that depression is a sometimes-crippling condition that is more complex than simply a state of sadness. This game attempts to put players in the shoes of a person suffering from depression, with the goal to resonate with as much of the environment as possible.

Sometimes the goal will be unattainable, as the main character will be too far gone to resonate with anything. Many times, the player will simply go with the flow. The main character has moments of extreme highs and lows. Extreme highs involve a section that involves bouncing atop as many leaves and flowers as possible to reach greater heights. Conversely, extreme lows will have the main character sucked into the earth, into a desolate, confined space. The idea is to give players the perspective of a person going through depression and to provide a greater understanding. In many ways, the game succeeds in that goal with the way the tone often shifts so dramatically.

Many will not stick with this game for long. There’s no denying that the subject matter is a downer and with the game going at its own pace, players may not choose to go along for the entire ride. However, Elude proves itself as a valuable tool for creating empathy. While I may not always recognize someone going through depression, I now have a greater sense of the sense of disconnect that person endures in their everyday life.
Those looking to try out Elude can do so for free at the game's website. The next step for these students of Singapore-MIT GAMBIT Game Lab is to send Elude to the 2011 Independent Games Festival, where it will be entered as a part of the event's student competition.
ANOTHER 20 GAMES THAT MAKE YOU THINK ABOUT LIFE

Fans of philosophical games rejoice. We have a further 20 thought-provoking games for you to play.

Published by Tasha on 20th November 2010

First we gave you five. Then we gave you ten. Now we are giving you 20 games that make you think about life. If you have developed a taste for games of a philosophical nature, then you should be in for a treat - we have some seriously innovative games here, everything from Elude, a game that explores the nature of depression, to Ulitsa Dimitrova, a tale about a street-urchin in Russia.

As with our previous lists, we have focused mainly on free games that you can play in your browser. But we have also thrown in the occasional downloadable game. These are free to play too. Before we get to the actual games, we would like to thank all our readers who suggested titles for this list. You made our job so much easier. And, of course, kudos to the game developers who created these games. Your creativity and craft are immensely appreciated.
ELUDE
Developed by Singapore-MIT Gambit Game Lab, Elude is a dark, atmospheric game that aims to shed light on the nature of depression. You play a little guy exploring a beautiful yet forbidding world. The world has three distinct levels, each a metaphor for a different mental state.

The forest that you start the game in represents a normal mood. You can ascend to a higher plane - happiness - by climbing the trees in the forest. From, here you can leap joyously up into the sky by jumping on floating flowers and leaves. The leaves and flowers disappear after you have touched them and eventually none are left to keep you aloft and you plunge down into the third game area: depression.

This is a gloomy underground cavern, with a sticky muddy base that sucks you down. The first time you end up in this dark place, it is quite simple to escape, but as you progress through the game, you will end up here again and again, and each time you will find it more difficult to drag yourself out of. Elude is a mesmerising gaming experience with a serious message. Play it here.
IGF Submission Picks: ‘Shadow Shoppe’ and ‘Hell is Other People’

As the day of the next Independent Games Festival draws nearer, the finalists prepare for an incredible experience at the Game Developers Conference in March. On the other hand, we at DIYgamer are still sifting through the list. Last year, we began a countdown to the Independent Games Festival. The way this works is easy: we simply select games at random from the lengthy (originally 306, then reduced to 301) list of IGF submissions and discuss what they’re about and how they play. For this week’s column, I played through a memory game unlike any other in Shadow Shoppe and a little shooter with a very unique twist in Hell is Other People.

Before starting this I want to emphasize that this is only meant to give you my impressions and perhaps that extra kick to try out some of the IGF submissions, whether they be these or any of the other 301. I assure you, you will discover that there is something unique about each and every game. And hey, if you’re lucky, some of them (like these) are even playable for free! All right, without further ado, here are this week’s picks.

Where is fat? I can’t find fat in this list of adjectives.

That’s because Shadow Shoppe is not centered around physical descriptions. Well, in a sense, it is: you are shown a shadow and must select whatever trait you believe describes that shadow. After going through a number of them, the game will provide you with the trait(s) you chose and you are then tasked with picking out the shadow you originally applied them to. Sounds easy? At first, maybe.

When you make it through the first couple stages of the game, however, you realize that it truly is a difficult task. For one thing, the adjectives aren’t words such as short, fat, thin, etc. (for the most part, at least) but instead are along the lines of wealthy, sloopy, frail, etc. These are characteristics and traits of somebody that aren’t easily described or attained through the physical shape of a shadow. Obviously, Singapore-MIT Gambit Game Lab’s creation shines for this one very reason: it’s an experiment and an assessment. Shadow Shoppe was created “with the intention to collect data on how people associated character traits with body shapes.” That being said, this is the easiest way to take part in an experiment. How’s that for experimental gameplay?
MIT lab helps designers reimagine video games

By Mark Beard
Globe Correspondent / March 8, 2010

Don't bother asking Abe Stein whether he believes video games qualify as art.

"The answer," he said, "is an obvious 'yes.'"

Stein's office at the Singapore MIT GAMBIT Lab in Cambridge reflects his commitment to the medium. Guitars line one wall in the long, windowless workspace. A piano and several PC workstations fill the rest of the room. It is where Stein, GAMBIT's audio director, creates scores and sound effects for games that researchers develop in the lab.

GAMBIT - an acronym for gamers, aesthetics, mechanics, business, innovation, and technology - could be minting superstar developers, much in the way the University of Southern California turns out big-budget filmmakers. Stein's studio work, for example, has been featured on the Cartoon Network's "Adult Swim." And before he joined GAMBIT at the Massachusetts Institute of Technology he was a sound designer for Blue Fang Game LLC, in Waltham.

And it's not like GAMBIT's game designers are turning up their noses at the prospect of making money.

"We're not forsaking the commercialization of games," said Stein, noting the government of Singapore's support for GAMBIT.

Each summer, Singapore, a country generally considered to be among the most "wired" for technology, sends about 60 college students to the lab to learn to create video games.

The partnership between MIT and the government of Singapore is also intended to increase the worldwide appeal of games by engaging professionals from both sides of the globe. It's a departure from a common video game distribution model: Develop a game in Asia, exclusively, then translate it for Western audiences.

GAMBIT's researchers, a collaboration of artists, historians, writing instructors, and educators, are mostly interested in breaking away from gaming conventions: the princess who needs rescuing, the shady merchant with the weapon you must get to survive the next chapter, the mushroom power-up.

They are also focused on teaching courses with heady titles like "Making Deep Games" and publishing papers such as "BioShock: A Critical Historical Perspective."

"Everything done in the lab is based on some sort of research interest," said Eitan Glinert, who was GAMBIT's first graduate student, in 2007.

At GAMBIT, Glinert created a PC game, AudiOdyssey, in which the player stars as a club DJ trying to get
people to dance. The goal is also to avoid getting the dancers so excited that they knock over the turntables.

Clinert said he deliberately emphasized audio quality over graphics, to discover whether "the visually impaired and the sighted can enjoy the same level and quality of game play," according to the objectives he listed on the AudioOdyssey download page. Researchers at GAMBIT are also conducting research into how people learn through playing games.

Answering such questions can pay off in the long term by improving the storytelling in games, said a GAMBIT postdoctoral researcher, Clara Fernandez-Vara.

"One of the Holy Graals [of video game development] is finding a way to give players the ability to generate their own stories," she said.

Fernandez-Vara - who teaches a humanities course at MIT, "Writing for Videogames" - last year published a mystery game, Rosemary, which avoids "the trite promise of the player character being amnesiac," according to her project description.

In Rosemary, the player solves the game's mystery through Rosemary's senses of smell and hearing, and by arranging objects to evoke memories for the character.

Like most of the other GAMBIT games that can be downloaded from the website, it is written for PCs.

Fernandez-Vara suggested that GAMBIT developers would also like to develop games for video game consoles, such as the Wii. But some console makers prefer to share their software development kits exclusively with video game publishers, whose games unfold with a predictability that they, and shareholders, find comforting.

Take, for example, Electronic Arts Inc., which last month reported 2010 third-quarter net revenue of more than $1.24 billion. Its most popular titles were sequels: Left 4 Dead 2, FIFA 10, Madden NFL 10, and The Sims 3.

The big developers' astounding cultural influence also makes it hard to get young students to innovate, said GAMBIT's lead game designer, Matthew Weise.

"I can't tell you how often students have said to me something like, "What if I do a power-up that isn't a mushroom?" " said Weise, referring to the quick energy boosts that game characters get by touching, or consuming, an object (often, a mushroom). "It's still a power-up."

Weise and others at GAMBIT also reach out to students through weekly open houses, where they introduce them to some video game history and observe how they interact with GAMBIT's own games.
See Me, Hear Me: A Video Game for the Blind

Students have released a video game that makes it possible for visually impaired people to get in on the action. Match the clapping beats, and clubgoers dance.

By ABBY ELLIN
Published: December 26, 2008

The Singapore-M.I.T. Gambit Game Lab ("gambit" for gamers, aesthetics, mechanics, business, innovation and technology) brings together computer geeks of Cambridge and computer geeks of the Asian city-state. The point: to develop video games for the global market from the outset, not translate them from one continent to another.

Eitan Glinert, there as a master’s candidate in computer science, got to thinking about one market lost in translation. "People with disabilities were being left out of progress in the gaming market," says Mr. Glinert, 26. For his master's thesis, Mr. Glinert wanted to make a game that would work equally for the visually impaired and for the seeing, so they could play together.

A team of seven other students at the lab and a professor from the National University of Singapore pitched in. The result, AudiOdyssey, can be played with a keyboard or Nintendo Wii remote (to download, go to gambit.mit.edu/loadgame/audiodysssey.php).
The game stars a D.J. named Vinyl Scorcher, whose objective is to get the people in his nightclub on the dance floor, by playing great music. “Choosing music as our central game theme works perfectly since both sighted and nonsighted users are equally familiar with music,” Mr. Glinert says. But it wasn’t enough to make the game playable by both groups; both groups had to have the same experience.

“You listen for clapping beats while the song is playing,” he says. “Your task is to match these clapping beats.”

If you hear a clap to your right, swing the remote to the right in time with the music, or hit the right arrow key. With a “beat” matched, the player adds more tracks, and more clubbers dance. “The more complex the song gets, the more crowded the floor gets,” he says. One obstacle: overexcited clubbers might bump into his table. And onward to advanced levels of play.

Since the game came out last summer, Mr. Glinert has founded Fire Hose Games, in Cambridge, to develop video games with a positive social impact.

He wrote his thesis on his AudiOdyssey research. He got an A.