

The View from Lewis College

# BIG PICTURE

Fall 2018

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## Greetings from Dean Himes

The end of the fall semester is here and everyone on campus is rushing to finish up courses, projects, and grading. It has been a busy fall at Illinois Tech. We welcomed a record number of new undergraduates to campus, our largest first-year class since the days of the post WWII GI Bill. Their presence brings an enthusiasm and energy that has enlivened all of us. In addition, in October we cut the ribbon on the new Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. This amazing building will be the home to the team-based Interprofessional Projects (IPRO) Program, as well as the new home of the Institute of Design. Clearly, the campus is changing. If you haven't been back for a while, I encourage you to come and see the new Kaplan Institute building and meet some of our current students.

This year we experimented with a new format for our Lewis College Roundtable. Rather than hold the event on campus, we partnered with the Chicago Toy & Game Fair to host the Play in Education conference track. The day-long event at Navy Pier featured speakers associated with the educational toy and game industry as well as educators and our own faculty. This framework brought us increased visibility in the community and the opportunity to interact with a larger network. As a college it is important that we continually find new ways to highlight the research of our faculty and raise awareness of our exciting programs.

One of my greatest pleasures is hearing and reading the exciting new work of our diverse faculty body. Over the past year several faculty members in the college have received significant honors. Jennifer Miller (psychology) and Marie Hicks (humanities) were promoted to the rank of associate professor. Scott Morris, professor of psychology, was named a fellow of the American Psychological Association. Marie Hicks, associate professor of history, was awarded a fellowship at the National Humanities Center in North Carolina. Patrick Corrigan, Distinguished Professor of Psychology, was selected to receive the President's Medal from the Royal College of Psychiatry. In addition to awards, faculty also published new books, including Daniel Bliss, assistant professor of political science (*Economic Development and Governance in Small Town America*), Greg Chasson, associate professor of psychology (*Hoarding Disorder*), and Patrick Corrigan (*The Stigma Effect*).

This issue of *Big Picture* focuses on the impact of games in our lives. I hope that as we enter the holiday season, you will find time to enjoy some games with your own family and friends.

**Christine L. Himes, Ph.D.**  
Dean, Lewis College of Human Sciences



Jennifer Miller



Marie Hicks



Scott Morris



Patrick Corrigan



Daniel Bliss



Greg Chasson

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Students in the *American Toys and Games* course learn how repetition and rhymes can affect jump rope and other games.

# BIG PICTURE

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*Informing the future: New worlds of possibility at the intersection of humanity and technology*

Lewis College of Human Sciences was formed on June 1, 2013, and houses the Departments of Humanities, Psychology, and Social Sciences.

Illinois Institute of Technology, also known as Illinois Tech, is a private, technology-focused research university offering undergraduate and graduate degrees in engineering, science, architecture, business, design, human sciences, applied technology, and law.



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ON THE COVER: Third-year social and economic development policy major Abdrahman Othman (L) and Yuri Mansury (R), associate professor of social science, play a game of pool in The McCormick Tribune Campus Center.



# Gaming for Good |

*Examining how games can be designed to make a positive impact on kids and adults*

Did you jump rope or play hopscotch on the playground in elementary school? Have you spent hours playing Monopoly or other beloved board games with your friends and family? Do you pass the time playing Candy Crush or Angry Birds on your smart phone?

Whether you prefer card games, board games, arcade games, or video games, we've all had fun playing games at some point in our lives. For many of us, playing games brings happiness and joy to our days and fostering connections with the people who play them with us.

At Lewis College of Human Sciences, we have several faculty and students who explore the history of games and gaming culture, study the impact of games on our lives, and develop games to make a positive impact on our world. In this issue of *Big Picture*, we explore two game-related projects from Carly Kocurek and Jennifer Miller.

## **Research-Based Design Principles for Educational Games**

There are many games on the market that are labeled as educational games, but what qualities do games need to make a positive impact on learning and development? In 2015 Jennifer Miller, associate professor of psychology, and Carly Kocurek, associate professor of digital humanities and media studies, received one of Illinois Tech's Nayar Prize research grants to create a game to increase early-language development in children from under-resourced communities.

"We wanted to create a game founded on empirical research throughout the entire development process," explains Miller, who specializes in the development of language and early-childhood development. "We decided to make an interactive digital game for two- to three-year-olds because two is the earliest age recommended for screen interactions. We quickly realized

that high-quality design research was lacking for our targeted group. Typically for this age group, a game is created and then evaluated for its effectiveness, rather than using research to inform decisions about the development and design of the game.”

Miller and Kocurek developed five principles for designing educational games, which was recently published in the *Journal of Children and Media*:

**Games must be developmentally appropriate.** “A three-year-old child is very different from a five-year-old. Many games and apps fail to address their intended audience and don’t consider the cognitive, social, and emotion behavior levels of children,” Miller says.

**Game design should integrate learning-sciences frameworks.** Demonstrated learning techniques, such as repetition, should be incorporated into a game. The more someone interacts with an activity, the more they learn it.

**The social context of the intended audience should be embedded into the structure of the game.** “We know that parent-child interactions are important in early-childhood development. Designers can develop certain features that require the caregiver to provide input, allowing the child and caregiver to play together. For older kids, games can include multiple players to encourage social interactions with others,” explains Miller.

**Games need to be diverse and inclusive.** “Research shows that many parents won’t choose a game because their kids can’t relate to the main character,” says Miller. “Designers should use main characters, such as animals, to have a broad appeal. Some games are now allowing players to customize the main character.”

**Games need to have learning outcomes that can be applied in the real world.** “This is a universal theme in education,” says Miller. “How do we apply what is learned in a game or classroom to the real world?”

Using these guiding principles, Miller and Kocurek developed an interactive storybook game called Zebra Cakes. In the game, Zari bakes a cake for her friends. Children playing the game help Zari choose the different features of the cake while learning about the different objects in the kitchen. There is an assessment at the end of the game to see what vocabulary was learned.

All of the elements of the game were chosen based on information they collected from children, caregivers, and educators in Chicago’s Bronzeville neighborhood. “Our main



Carly Kocurek (L) and Jennifer Miller (R)

character was designed based on the preferences of the kids we interviewed—when given a choice to pick favorites, purple was the most popular color and zebras were the most popular animal,” Miller explains. “We chose a kitchen setting because we found that the children we interviewed had the lowest vocabulary in kitchen-related words. There is a correlation between how much kids interact with games and how much they learn, so we developed this game to be playful and fun, while helping these kids improve their language skills.”

### Crafting a Game for Grieving

If you’re an introvert who has ever played charades, you’ll know that games can take you out of our comfort zones to perform tasks to win the game. Tapping into the idea that games can encourage us to look beyond our safe spaces, Carly Kocurek, a cultural historian and game developer, created a conversation game to help people with grieving.

The development of the game stems from Kocurek’s own life. After her grandmother passed away a few years ago, she began to think about her own grieving process and how other people cope with grief and loss. “Grief is inevitable in our lives,” says Kocurek. “We all process grief differently. Some people process their grief in isolation. Others may want to talk about it but just don’t have an outlet to talk about it. Research suggests that people can cope better when they develop rituals around their grief and form connections and support systems.”

In the card-based game, players are given different tasks each time they draw a card, such as verbally responding to a prompt or doing some sort of activity. The cards are intended to be conversation starters to help players open up to each other. Understanding that some cards may be too sensitive or difficult for some players, the game is self-directed—if you don’t like the card, you can put it back. “It may not be a game for everyone, but if people don’t have the tools available to help them cope with grief, there may be different elements of this game that can help them through the process,” she says.

Kocurek has tested the game with different types of groups of people, including couples, acquaintances, and complete strangers. She also has presented it at several conferences including the annual Different Games Conference.

“Games are a way to do things outside of ordinary life,” Kocurek says. “I grew up playing cards with my grandma. Games are a great way to spend time with people. They provide places for learning and human connection. I really enjoy finding ways to explore this space in different ways.” ■



A screen shot of Zebra Cakes.

# 60616

**ONE THEME. SIX PERSPECTIVES.**

*The 60616 zip code is home to the Illinois Tech community and the historic neighborhood of Bronzeville. In each issue of Big Picture, we will select one unifying theme and present six distinct perspectives from our community. The 1-6 theme highlights the common spaces we inhabit and the different perspectives with which we view the world.*

*This issue focuses on the impact of games on our lives. We hope you enjoy reading stories about how playing games has impacted the work, research, and free time of six Lewis College students, faculty, and alumni.*

## READY PLAYER TWO

When I was a kid playing games was one of my favorite things to do. Games were always fun to interact with, easy to pick up, and great to play with friends—whether cooperatively or competitively. As I grew older I realized I wanted to create video games for all people to play so they, too, could experience that same joy I have for games. Now I am majoring in digital humanities with a specialization in game history and design. I also create video games to practice for the big leagues. In short, video games are really important to me.

My interest in games most likely started when I was about seven years old. The first game I played that really interested me was Spyro, and after that, I knew I wanted to work with games for the rest of my life. What furthered this ambition was that I discovered I enjoyed coding. I figured how the coding for games worked by breaking the game codes. What kid doesn't like breaking stuff, especially if they're allowed to do so?



I am currently taking the course Fundamentals of Game Design, and I've learned more out of this course than any other course I've taken so far. I am currently working on publishing a full-fledged game on a website such as Steam or another well-known platform to get more insight on what people want to see in a game and how they like the content I'm producing. This feedback will help me become a better game designer.

To me, games are a way to escape everyday life—you can just sit back and have fun and not worry about the consequences or any hardships. Video games are therapeutic in a way, letting people go through things that they wouldn't normally experience in real life.

All in all, I hope that people from around the globe will be able to stop what they're doing and play a game to add a little fun to their lives.

**Mohamed Konneh**  
3rd-Year Digital Humanities

## ESPORTS AND DIGITAL ARTS

The Esports and Digital Arts Center, completed this summer to officially support the gaming community at Illinois Tech, is open to all! The mission of the center is to create a space that is inclusive and allows everyone to connect through gaming and the technologies related to gaming. The Esports and Digital Arts Center is a resource for the competitive gamer, the casual gamer, and those interested in creating games and digital experiences.

There is research supporting the benefits of gaming. According to the Office of Naval Research, studies "indicate that video games can help adults process information much faster and improve their fundamental abilities to reason and solve problems in novel contexts." Additionally, "video games can increase perceptual abilities and short-term memory and they allow the player to focus longer."

At Illinois Tech we have a lot of students who identify as gamers. We have over 70 esports athletes playing competitively on teams against other universities in games such as CS:GO, DOTA2, Fortnite, Hearthstone, League of Legends, Overwatch, Rainbow Six Siege, and Rocket League. We also have many students who have volunteered their talents for support roles such as setting up the computer networks for LAN parties, leading workshops that teach others how to stream on Twitch and YouTube, creating marketing materials, serving as a coach or in-game analyst, organizing tournaments, etc.

This summer the center hosted two camps for high school students. The students learned to use the Unity game engine, which allows for multi-platform deployment of games. With Unity you can create your content once and deploy to mobile, AR, VR, PC, Steam, etc. Our center currently has 14 high-end gaming systems and an Oculus Rift for VR games. We plan to do more workshops and host events that give students an opportunity to come together, create, and play. We will continue to invite guest speakers and look forward to growing and connecting the gaming community at Illinois Tech.

**April Welch (M.S. Technical Communications and Information Design '09)**  
Associate Vice President, Strategic Initiatives  
Director, Esports and Digital Arts



Illinois Tech's new Esports and Digital Arts Center is located in The McCormick Tribune Campus Center (MTCC).

## TOYS AND GAMES: BEYOND CHILD'S PLAY

Working on puzzles on the floor of the classroom for the first day of class may seem more reminiscent of a young child's school experience than a college student's, but that's exactly what I found myself doing this semester. When I first registered for Associate Professor Carly Kocurek's American Toys and Games course this semester, I wasn't sure what to expect except perhaps learning some interesting tidbits about classic American toys. The reality has been much more interesting and mentally stimulating than learning random facts about various toys and games. I have learned a lot of interesting trivia (like how jigsaw puzzles were originally cut using scroll saws, not jigsaws), but I've also had the chance to think about toys in a new way.

It has been rewarding to learn about the social and historical contexts in which many classic toys were created, and how those contexts impacted the way children interact with and learn from toys. Though it originally seemed a little silly to be playing with toys in a college course, it has been refreshing to be able to take a break and play with toys I haven't played with in over a decade. Doing so has also sparked my interest in learning about the background of other toys from my childhood. As a result, I'm currently working on a research project about the not-so-wholesome past of an American favorite: Raggedy Ann. Normally I wouldn't have given the doll a second thought, but thanks to Professor Kocurek's class, I've learned a lot about the racist inspirations for Raggedy Ann and how the doll may still harmfully impact children despite its seemingly innocent nature.



All too often toys are given to young children without much thought about the problematic history behind many of them or how they can leave a lasting impact on a child. That is why I think it is important to think of toys as not just objects for play but also as reflections of our cultural values. It will be interesting to see where the toys will be in the coming decades—whether toys we consider classics today will still be classics to future generations, and how our current values will manifest themselves in the world of toys.

**Amna Bhatti**  
4th-Year Digital Humanities

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## USING VIDEO GAMES AS DIAGNOSTIC TOOLS

I am a game developer and have worked with an ophthalmologist to create a diagnostic tool for amblyopia. Amblyopia is an eye condition that prevents one eye from focusing clearly. Focus issues can result when one eye is more nearsighted or more farsighted than the other, when one eye has astigmatism, or when the eyes are misaligned. We commonly recognize amblyopia as having a "lazy eye."

I was introduced to the ophthalmology world by my sister who is a pediatric ophthalmologist. She was at a conference and saw a poster about the benefits of using video games for the treatment of eye disease. I was working at a large gaming company at the time so she went over to the presenter to talk about my work and ended up connecting me with my research partner, Dr. Robert Arnold.

Dr. Arnold and I have created a diagnostic test for amblyopia on the Nintendo 3DS system called PDI Check. Using Nintendo 3DS's ability to track facial and eye movements, we developed a game to easily and accurately measure visual acuity, depth perception, and color vision. Previously amblyopia was diagnosed by a paper test, a method that is not always accurate and is expensive to process. PDI Check has revolutionized the diagnostic process—the game measures everything paper tests measure but with more accuracy and at the fraction of the cost. The game tracks eye movements in real time, resulting in more detailed results. We recently received a patent for our work as it is the diagnostic tool that utilizes a 3D screen for eye tracking and vision testing.

PDI Check has already had a significant impact around the globe. Dr. Arnold frequently travels to Burma and other countries to provide free ophthalmologist services. He has brought the PDI Check system with him to not only diagnose eye conditions, but to also quickly identify any issues prior to performing eye surgeries.

Children with amblyopia are often treated with an eye patch. By wearing a patch over the stronger eye, the amblyopic, or weaker, eye strengthens over time. We have also created a game that can be used as an alternative treatment method to the eye patch. Our initial results have shown that playing the game for two to three hours has similar results as wearing an eye patch. PDI Check has been well-received in the ophthalmology community, and we are excited about having more doctors adopt this technology into their practices.

**Alex Damarjian**  
2nd-Year Technology and Humanities Ph.D. Candidate



## EXPLORABLES

I came to Illinois Tech as a computer science major but quickly realized I really enjoyed my humanities classes. I wanted to find ways to incorporate more humanities classes into my course work and discovered the digital humanities major. It is really the best of both worlds—I can take computer science classes while diving deeper into humanities topics that interest me.

I am specializing in game design and history, and one course that I've found particularly interesting was Visual Storytelling. This course focused on how to write a game story, including developing characters, structuring teams, and creating story lines. During the class, we learned about Nicky Case, a developer who creates Explorables, games designed to educate players on specific topics. Case has developed several Explorables on high-concept, relevant issues such as gentrification and the sensationalism in media. I find these games very interesting because they are an effective tool to learn about complicated subjects and systems.



I am currently creating my own “explorable” based on philosopher Peter Singer’s Drowning Child and the Expanding Circle experiment. In the experiment, Singer essentially explores the spontaneity of charity. Most people would likely stop in their tracks to help a child drowning in a river. But what choices are made as the proximity to the child in need changes? Would they help a child in their city? What about donating to an organization that helps children in another state or the other side of the world? Where is the line drawn when deciding whether or not to help?

The goal of my game is to teach people about Singer’s experiment in an interactive way while showcasing the nature of the nuances in his experiment. There is quite an onus on game designers to ensure that ideas come across clearly or else players will lose interest quickly, so it has been a really fun challenge to think through the story line and all of the possible scenarios in the game. Using Twine, I created a text-based storyboard of the game and am now ready to move into the next phase of development, which is programming the physics and movement of the game. I want players to be able to physically move the characters through the various scenarios so they feel more invested in the decision making and overall game. This project is something I am working on outside of my school work, and it has been a really fun way to put what I’ve learned in my classes into practice.

**Eric Bartell**  
3rd-Year Digital Humanities

## GAMIFICATION

As an industrial-organizational psychologist, one area of my research focuses on gamification—applying game elements to non-game contexts—in learning, training, and assessments.

One of my current game-based learning projects is the evaluation of a social impact game called Fake It to Make that teaches players how to be skeptical of news they encounter on social media. There are six different levels in the game that involve various tasks such as evaluating news stories for their credibility, creating a fake news website (within the game world) that creates ad revenue, and creating actual fake news content. The goal of the game is to teach players how to understand the financial incentives for creating and disseminating fake news and to identify common techniques used to increase the believability and drama of news articles. One of the top skills employers look for when hiring recent graduates are critical-thinking skills. The game was developed with undergraduates in mind to enhance their critical-thinking skills as they evaluate information in and out of the classroom.

Another area of my work looks at the gamification of training. Introducing elements such as leaderboards, badges, progress bars, or some sort of narrative into a training can take a training session that may otherwise be perceived as dry and boring and transform it into a more engaging experience.



The ultimate goal of adding game elements to training environments is to motivate trainees to spend more time with the information so that they retain the information and apply it their jobs. My research looks at how effective different game elements are within a training context. How do these individual game elements impact attitudes and behaviors during training? For example, leaderboards introduce a social, competitive element to games, which could enhance the time spent learning and ultimately change the outcomes of the training. If some game elements seem to produce more positive results than others, we can provide recommendations to organizations to improve their training programs.

**Kristina Bauer**  
Assistant Professor of Psychology  
Industrial-Organizational Psychology Program

# Growing Expertise

This semester we welcomed Xiaoqian Li, assistant professor of communication and media studies, to Lewis College. She recently completed her Ph.D. at the University of Texas and is now the newest faculty member in the Department of Humanities.

Li's research and teaching are focused on the social and health effects of information and communication technologies (ICTs), such as social media, on social networks. "Social networks have huge impacts on our lives," she says. "Information and communication technologies are crucial aspects in how we maintain, and even form, our social networks." In addition to studying the impact of ICTs, Li's work also examines the accessibility and availability of digital technologies. Digital inequalities and social inequalities go hand-in-hand," she explains. "It is important to study how to bridge gaps caused by the inequalities to make the world better."



Illinois Tech's interdisciplinary and collaborative environment was a significant factor in Li's decision to come to the university. "I am excited to be at a technology-focused university and look forward to collaborating with other scholars in different disciplines who share common research interests," she says. "I am also looking forward to working with my colleagues to grow the humanities department, the college, and Illinois Tech as a whole."

## PROGRAM SPOTLIGHT: DIGITAL HUMANITIES

What does it mean to be human in a technology-based world? Students in our digital humanities program are exploring that very question.

As one of a few such undergraduate programs in the country, this innovative program approaches traditional humanities topics from a technology-based perspective. Communication is studied in the context of visual design and web development, and students learn how to communicate complex ideas beyond writing standard papers. Courses on culture examine how video gaming, social media, and other technologies influence our modern society.

Many courses in the program are very hands-on and require students to create interactive audio/visual projects to showcase what they've learned over the semester.

By the time students graduate, they will have built a comprehensive portfolio that can be used in job interviews or graduate school applications.

"I chose digital humanities because I knew I wanted to work in a tech field but didn't want to only take technology-focused classes," says third-year student Mohamed Konneh. "I am specializing in game history and design and want to become a game designer, so the program is a great fit for my future career."

Digital humanities majors are well-equipped for jobs in digital communications and social media, web and game design, user-experience and interface design, marketing, and many other fields. Our graduates have gone on to work at a variety of organizations, from small startups to large social media companies.

Learn more about our digital humanities program as well as our other undergraduate programs in humanities, psychology, and social sciences online at [humansciences.iit.edu/programs](http://humansciences.iit.edu/programs).



Several game-related courses are found in the digital humanities program, including *History of Video Games* and *Fundamentals of Game Design*.

# Summer Fun

## at LEWIS COLLEGE

Did you know that each of the departments in Lewis College host a summer program for high school students? These week-long programs introduce students to college life and exploring some of the exciting areas of study that Lewis College offers. Check out some of the highlights!

### Virtual Reality Game Design

The Department of Humanities hosted Lewis College's newest program this summer, Virtual Reality Game Design. The program's curriculum examines how virtual reality (VR) and video game technologies permeate so much of our lives. Hands-on learning experiences with art, programming, and VR hardware and software used by professional game designers, gave the students the opportunity to create their own VR game that they could share with friends and family.



The humanities summer program was hosted in the new Esports and Digital Arts Center, giving students access to the same gaming software and hardware professional game developers use.

### Global Chicago

In its second year, the Department of Social Science's Global Chicago summer program explores the ways that Chicago is connected to the world through immigration, commerce, and tourism. Field trips to the nearby neighborhoods of Bronzeville, Chinatown, and Pilsen gave students the opportunity to see Chicago's role as a global city first-hand.



The university's archivist and adjunct humanities faculty member Ralph Pugh gave the Global Chicago students a tour of the historic sites of Bronzeville.

### Psychology in Everyday Life

Psychology in Everyday Life teaches students about different psychological principles and theories, and how to apply these ideas to real life. Some topics covered this summer included bias and culture, social media and mental illness, and research methods. Using the knowledge they gained over the week, the students conducted their own research projects and presented their findings at the end of the week.



Students asked strangers in downtown Chicago to draw conclusions about the people in the photos as part of a project on culture and bias.

Do you know a high school student who would enjoy attending one of our summer programs? Head to [admissions.iit.edu/summer](https://admissions.iit.edu/summer) for our summer 2019 program information and applications.

# Save the date for the next **gameII**Tes competition!

Calling all game designers! Enter your original games in the next **gameII**Tes competition!

**gameII**Tes is a juried competition for games created by undergraduate and graduate students from Illinois Tech and select Chicago-area schools. Game submissions can include tabletop games, digital games, and experimental games. Prizes are awarded in several categories including:

**Best Tabletop Game** • **Best Digital Game**  
**Award for Technical Achievement** • **Award for Storytelling**



Game submission deadline: **March 1, 2019**

The winners will be honored at a showcase and networking reception in late March. Additional details about the competition will be available online at [humansciences.iit.edu](http://humansciences.iit.edu) in January 2019.