Anime-inspired graphics and a whimsical toy controller score points for a CDM game team. Learn more on page 8.
A unique medical informatics partnership opens students’ eyes to research-intensive graduate programs and careers
David Rein and Abum Okemgbo point to a computer screen displaying striated bands of white mottled with dark spots and interrupted by jagged peaks and valleys.

“These are advanced stages of age-related macular degeneration, or AMD,” says Rein. He points to different areas of the optical coherence tomography (OCT) scans, showing magnified layers of a patient’s macula, the central area of the eye’s retina. “We’re focusing on drusen—small build-ups of waste. Analyzing this automated segmentation process with algorithms can show how drusen develop and, hopefully, help predict when people may get AMD.”

Rein and Okemgbo aren’t doctors or medical technicians. They’re undergraduate participants in MedIX, a highly selective, annual summer program at the School of Computing (SoC).

Supported by the National Science Foundation (NSF) through its nationwide Research Experiences for Undergraduates (REU) initiative, it accepts 10 students from across the country. Faculty and graduate mentors at DePaul and its program partner, the University of Chicago’s Radiology Imaging Research Institute, guide students through case studies in biomedical and health care informatics, a field that merges medicine with computer and data science to help medical practitioners make informed decisions more conclusively. The OCT scans are part of a large, aggregated data set provided by Northwestern Memorial Hospital.

“Prediction models are at the core of all these projects,” says SoC Professor Daniela Raicu, who founded the program 15 years ago with fellow SoC Professor Jacob Furst. “Machine-learning algorithms are key to making these predictions. You refine them to make sure they’re generalizable and robust for different patients.”

Other projects tackled by student teams reflect the vast variety of informatics research: Modeling uncertainty in medical reports. Predicting comatose patient outcomes. Mining data in Reddit mental health discussion threads to ascertain suicidal tendencies.

MedIX’s main goal, however, is to teach the rigors of interdisciplinary research many of the students will encounter in graduate programs in STEM fields.

“That’s at the top of the list,” says Furst. “They won’t all end up in medical informatics, so we also teach general aspects and phases of research.”

Six of the students are based at DePaul, four at the University of Chicago. They convene on Fridays to share progress reports, present papers and enjoy shared activities that provide insights into careers they’re considering. This past summer, for example, included a panel on women in science and technology, a field trip to Argonne National Laboratory and a visit from Harriet Taylor, a REU program director for NSF, which has provided more than $1.5 million in funding to MedIX, benefiting more than 130 students, 52 percent of whom are female.

Taylor was impressed by the student presentations she observed. “It takes a village to have a successful REU site, and we appreciate the commitment of your institutions to this program,” said Taylor. Sharing a comment from another NSF director unable to attend, she added, “I can confidently say the research you’ve done this summer, and hopefully will do in the future, will make this country healthier.”
THE VOICES OF SUMMER

CDM and the Chicago Housing Authority team up to help Chicago youth express their creativity

They were stuck. The participants in adjunct faculty member Patrick Wimp’s screenwriting workshop had a bad case of writer’s block. Hoping that a change of pace might do them good, Wimp and his student mentor, Julio Cortes, walked them over to nearby Millennium Park and encouraged them to make up stories about the people they saw milling around one of Chicago’s most popular attractions. “After performing this exercise, these kids were spewing stories like crazy,” says Cortes, a senior majoring in screenwriting at CDM’s School of Cinematic Arts (SCA).

Screenwriting is one of three disciplines—documentary filmmaking, and games and graphic design are the other two—for which CDM has developed six-week, intensive courses offered in partnership with the Chicago Housing Authority (CHA) as part of the One Summer Chicago employment initiative for youths and young adults.

A program that was meant to be

Four years ago, adjunct faculty member and digital media professional Liliane Calfee presented a model of what is now CDM’s One Summer Chicago learn-and-earn program to Associate Dean JoAnne Zielinski. Zielinski greeted it with enthusiasm, telling Calfee, “It’s not a matter of yes or no. It’s just a matter of when.” Providentially, within a matter of weeks, the CHA contacted Zielinski to express interest in partnering with the college.

Calfee says, “It was synchronistic. The structure of their program—the six weeks, the budget, the hours, everything—it matched to a T what I had already written. She sent my proposal over to them, and they said, ‘We love it. It’s a go.’ And we started that very same summer.”

Documenting lives

The original program encompassed only documentary filmmaking, which, then as now, is the only one designed exclusively for girls. “I have a master’s degree in international development,” says Calfee, “and I’ve worked in many different community projects around the world. What I have seen and learned is that women are cycle breakers, especially in communities with socioeconomic challenges.

“I saw that there was a huge disparity between male and female content creators in every industry related to media,” she continues. “I felt that for women, feeling the empowerment of telling their story could have a ripple effect in other aspects of their lives.” Since the program started, the girls often gravitate to topics that proclaim their worth, including the intersection of hairstyle choices and identity, reproductive justice and the self-explanatory “Southside Pride.”

James Choi, SCA instructor and award-winning filmmaker, has been a faculty mentor in the documentary film section from the start. “Anytime I can use filmmaking as an opportunity to help people grow, it’s amazing,” he says.

Six weeks is a very short time to create even these short films, but the low student-to-instructor ratio is a big help. “We have a faculty mentor and a student mentor each for four to five students,” Choi explains. “We help guide them through their idea and figure out the best way to tell that story. We take the lead in helping them formulate, refine, shoot, direct and then edit a film that they can really be proud of.”

The results have been impressive. Several of the films have screened at film festivals across the country. In April, Chaz Ebert, a DePaul law school alumna, publisher of RogerEbert.com and former CHA resident, helped host the premiere of the 2018 films at the Chicago Cultural Center, and she later helped publicize the films, which DePaul brought to screen in the Short Film Corner at the prestigious Cannes Film Festival. Perhaps most important, says Choi, “They have been playing at local high schools across the city to inspire kids to come to the program or think about filmmaking.”

On a practical level, students have been able to hook up with local businesses. Choi, who worked with the girls on a film about the Chicago food scene, said to them, ‘You guys are looking for jobs. This is a great opportunity for you to network.’ One of the girls took that to heart and would show up really enthusiastic and proactive, talking to entrepreneurs and owners. By the end of the program, she ended up working for one of them.”

Play that inspires

Allen Turner, a professional lecturer in game development and interactive media in the School of Design, has been the faculty mentor for the games and graphic design section since 2017. Turner says, “I do my best to expose them to multiple media for expressing themselves while at the same time getting them to talk about themselves and find ways to bring their personal experiences into the work they’re doing.”

That perspective was something that resonated with Latroyria Crawford, a student at Gwendolyn Brooks College Prep on Chicago’s South Side, who created a game called “Closer.” “It’s kind of a love story between two people who have an online relationship. Then one person doesn’t feel it’s close enough because it’s from screen to screen, not physical or close. I tried my best to make it make sense. It’s actually kind of inspired by my life.”
Rewards that run deep

For the mentors, participating in the program has many rewards. “I like to share my own passion for creative output,” says Wimp. “It’s really wonderful to watch younger people. They are a lot more uninhibited in terms of their creative ideas. We developed two scripts as a group that they really connected to. One is a kind of slasher film called ‘The Reaper’ and another is ‘On the Swings,’ a character-driven drama about a young man who’s dealing with PTSD as he pursues some career goals.”

Michelle Lega, a senior majoring in game design, was amazed at how quickly the participants she was mentoring were able to produce a finished product. “They were just so knowledgeable, so culturally and politically aware in a way that I certainly wasn’t in high school. We did narrative, then art, then game design and 3D modeling, and they were able to take it all in and produce things that I was really proud of and amazed at.”

The experience of mentees is uniformly positive. “I loved the entire experience, to be honest,” says Omari Whitaker, a young adult in the games section. “There was not one bad part about it to me. I grew over the course of six weeks, and not even just gaining a skill. I grew mentally. Knowing what I like and whatnot, and I met new people, made new friends. And I got paid to learn what I want to learn.”

Dynasty Robinson, who created graphic designs in Photoshop, chose the program because “I never knew about these things until I got here. So just being exposed, having that experience, meeting new people. And the food was good!”
Bright Idea

Data science professors take a shine to luminous technology for online learning
Data science professors take a shine to luminous technology for online learning

Professors and students than a PowerPoint slide or an instructor portal. But they do provide more personalized interaction between classroom lectures shared via DePaul's Desire2Learn (D2L) web recordings of complex data-science lessons or videos of complete classes. Lightboard videos are part of this resource expansion. They don't replace computer-screen for adding background scenes. Lightboard videos are part of the collaboration between CDM and CTL, which helps faculty design online courses. Its pilot phase this fall comprises five data-science videos, including one for McDonald's Advanced Data Analysis course.

So what's a lightboard?

A lightboard consists of two sheets of low-iron, architectural glass set inside a metal frame lined with an LED strip on its inner edge. Light from the LEDs is trapped and evenly distributed between the glass sheets. In a dark room, markings made on the illuminated board with a fluorescent, wet-erase marker appear to hover in space. Michael Peshkin, a Northwestern University mechanical engineering professor, devised the technology, which is ideal for instructional videos.

DePaul's studio was designed by School of Cinematic Arts (SCA) faculty who work at Cinespace, a professional film production facility that includes DePaul-operated stages.

Improving online courses

The lightboard videos add a high-production, competitive edge to SoC's online graduate data-science program. In 2018, CDM Associate Deans Raffaella Settimi-Woods and Theresa Steinbach and Associate Provost GianMario Besana secured a grant from DePaul's Academic Growth and Innovation Fund to bolster the program's assets and give CTL a unique teaching tool all DePaul colleges and departments can use for online courses and initiatives.

CTL's newest studios also include a large touchscreen and a green screen for adding background scenes. Lightboard videos are part of this resource expansion. They don't replace computer-screen recordings of complex data-science lessons or videos of complete classroom lectures shared via DePaul's Desire2Learn (D2L) web portal. But they do provide more personalized interaction between professors and students than a PowerPoint slide or an instructor repeatedly turning around to write on a whiteboard.

In our productions, the background and glass completely disappear. It's just the instructor and the text, which really pops off the glass.”

Creating the studio

In November 2018, the project team started testing production configurations in a large space at DePaul's Daley Building. In January, they began building out a smaller space that fit their setup better: a former classroom on the lower level of the DePaul Center. By June, they were online and planning shoots.

John Corba, director of Cinespace, drew up specs for the lightboard and assembled it. Pete Biagi, SCA's cinematographer in residence, assisted with the set design and placement of the digital cinema camera. Joe Lyons, associate director of Cinespace, rigged the studio's additional lighting. Part of the room was painted black, and a black curtain was hung as a triangular border around the shooting area. The camera peeks through one corner while the instructor, wearing a wireless lavaliere microphone that records high-end audio, speaks and draws on the lightboard's opposite side.

“This is where the wizardry happens,” says Kevin Lyon (LAS ‘09, MA '11), a CTL senior instructional designer who oversees the studio. "In our productions, the background and glass completely disappear. It's just the instructor and the text, which really pops off the glass.”

Postproduction editing is an essential part of the process. Shannon Lynott (CDM MFA '19), the team's videographer and editor, flips the image horizontally, since writing on the lightboard is backward from the camera's point of view. The best takes from the shoot are selected and cut together. Equation writing is sped up; numerals are animated. Clones are produced. It's also possible to superimpose PowerPoint graphics on areas of the lightboard through a color-swapping technique similar to a green-screen process. Videos will also be professionally captioned to highlight key lecture points and aid English-language learners.

Lyon helps faculty choreograph their performance on a practice whiteboard that's the same size as the lightboard. “Most of them are probably used to standing directly in front of what they’re writing and then moving out of the way,” says Lyon. “We teach them to move from left to right, top to bottom, leave a space in the middle for themselves and write in that space last.”

The bottom line

The bigger picture, says Lyon, is how the lightboard videos “affect student attainment, student success on the course, and use that as a model to roll it out for other courses.”

The Department of Environmental Science and Studies is interested in using the lightboard to help teach organic chemistry. The College of Communication is another likely participant.

“We want to show people how the work we do here has a direct impact on student learning,” says Lyon, “and on the university's success overall.”
As the gaming industry explodes, so do conceptions of what defines a tech-fueled, interactive game experience. Joysticks? Been there, done that. At the alt.ctrl.GDC exhibit in San Francisco’s Game Developers Conference last March, alternative-controller games were played with toilet plungers, guitars, book shredders and ropes. The plungers controlled plumber avatars; the guitars launched tabletop LED beams at opponents; the ropes helped players scale the walls of ruins.

For Overtime, a showcased game created by DePaul students and alumni, a basketball toy did the trick. Conference attendees manipulated a sliding button extending from a miniature hoops court connected to a game engine and video monitor. On the screen, an anime-inspired basketball player named Jessica responded through a series of brief athletic feats as the clock wound down on a critical game.

“We wanted to make a comedic satire of anime and not do a realistic sports arcade game,” says project lead Josh Delson (CDM ’17), who’s now program director of game design curriculum for the National Student Leadership Conference, a career-path guidance organization for college-bound youth. “It’s a bunch of mini games you complete in four to five seconds. Every second counts.”

Overtime’s journey to the industry’s biggest conference began when Delson and others in CDM’s Junior Development Experience network designed its first iteration for a live-streamed game jam on Extra Credits, a YouTube tutorial channel popular with game developers. Its enthusiastic reception inspired the team to go further. Industry actors agreed to voice the characters. Nix, a YouTube musician, and Chicago band Marina City provided tunes for an anime intro and credits-scrolling outro. An alternative controller, however, was key to heightening the whimsical aesthetic.

Thomas Newsome, a School of Design game design student who helps manage CDM’s Idea Realization Lab maker space, made two versions. The first set the toy atop a trophy base, included a functionless coin slot, and sent signals from the button handle with a rotary encoder attached to a belt. When the game was accepted into GDC after two smaller conferences in Chicago and Atlanta, Newsome upped his game. He used CAD software and a 3D printer to model and replicate the toy so it fit his add-ons, including a sliding potentiometer, commonly used for volume controls on audio equipment, for a more stable button handle.

The team transported the game to GDC in epic style aboard the Train Jam, an Amtrak packed with budding and pro developers from around the world who ride the rails from Chicago to San Francisco every year en route to the conference. Along the way, they networked, met mentors and designed simple games framed by fun themes.

The networking ramped up at GDC as thousands streamed by the team’s booth over five days, playing Overtime and learning about DePaul’s game design programs.

“I got my pitch down pretty efficiently,” says Newsome, “and I got to know Marina City’s intro song very well because it repeated constantly as the audio looped.”

Newsome and his teammates often came face to face with prominent designers they revered. He was also impressed by the gathering’s communal friendliness and diversity.

“Seeing that was super reassuring,” he says. “It was such an awesome environment for creating deep and useful connections.”

Learn more and meet the entire Overtime team online at overtime.games.
Alexis Auditore (CDM ’05) kept watch over Captain America’s shield, Thor’s hammer and Iron Man’s armor for nine years. She took her duties seriously, but didn’t share the awestruck adoration of other mortals when they saw her lugging around these iconic tools of the Avengers’ trade.

“People come up and gush, ‘Oh my God, it’s the hammer! It’s the shield!’ And I’m like, ‘So? Cool, whatever.’ You really need somebody who’s not a comic book-crazy Marvel fan to do that job.”

That job was manager of physical production at Marvel Studios. Auditore is now Marvel’s director of physical production for its upcoming, original series on the new Disney Plus streaming service. Her current role is similar, minus the warehousing and transport of heroic props, costumes and set pieces.

“Physical production is the nuts and bolts of filmmaking,” explains Auditore. “We figure out the budget and schedule, hire the key crew and department heads, find locations and deal with logistical things like insurance, travel, Writer’s Guild signatories, accounting staff. The creative producers say, ‘This is what we want to do,’ and we figure out a way to make it happen.”

It’s an epic undertaking considering the blockbusters Auditore has helped assemble, which include “Black Panther,” “Thor: Ragnarok,” “Guardians of the Galaxy” and “Avengers: Endgame,” the highest-grossing film of all time.

Auditore’s voyage to Marvel’s cinematic universe began during her undergraduate years at DePaul. Initially, she studied journalism, a concession to her father, who considered it a more viable career.

“I wrote for The DePaulia, and I was a DJ at the radio station,” recalls Auditore. “But I’d wanted to be in film since I was a kid, so I was also taking as many film classes as the Communications Department offered.”

After DePaul began offering BA and BS programs in digital cinema in 2003, Auditore changed her major during her junior year and gorged on classes to become part of the program’s first graduating class. “It was like a crash course of everything film: editing, cinematography, screenwriting, producing,” says Auditore.

“You only appreciate its insane level of detail when you’re standing in front of it.”

-Alexis Auditore

Auditore grew up in California and came to Chicago in her late teens when her father remarried and moved to the city. After graduation, she returned to her home state, earning a graduate degree in film production at Chapman University in Orange County. After two internships, Auditore was hired as an executive assistant in physical production at Mandate Pictures before industry connections led her to Marvel.

While safeguarding Marvel’s physical assets—a critical role for a studio repurposing them in sequels—Auditore also curated their display at museums, comic conventions and film premieres around the world. Among her favorites was the Doctor Strange costume designed by Alexandra Byrne. “You only appreciate its insane level of detail when you’re standing in front of it,” says Auditore.

Auditore, a detail-focused expert herself, now dedicates her logistical skills to Falcon, Bucky Barnes, Loki and Hawkeye, the superhero stars of Marvel’s next batch of streaming TV shows. She’s excited about her flight path across the Marvel Universe and into the big-bang world of streaming content.

“There’s no limit to it,” says Auditore.
DATA SCIENTIST HONORED
Assistant Professor Tanu Malik was awarded a Faculty Early Career Development grant, the National Science Foundation’s most prestigious award in support of early-career faculty. She will use the grant to design and develop a container method for sharing and reproducing computational artifacts. Malik plans to enlist DePaul students in the research, which will help scientists validate and build on each other’s work involving computations and data. She hopes to make the entire “compute environment”—data, programs, operating systems—portable so researchers can assess whether their experiments are reproducible, and others can do so more quickly and efficiently.

PROJECT BLUELIGHT SHINES ON
“Oh, Baby!,” a short film by Associate Professor Meghann Artes, won the silver award for animation at the University Film & Video Association conference following its unprecedented, collaborative creation by faculty and students from SCA and DePaul’s Theatre School and School of Music. Scored by SCA Associate Professor Rob Steel and inspired by fertility medicine, the film blends colorful Busby Berkeley-style choreography and Rube Goldberg-inspired stop-motion animation in an abstract celebration of conception.

“Hominidae,” a CG-animated short film in progress by Brian Andrews, SCA chair of postproduction, was selected for a pitch and demonstration at the XR Development Showcase, held last spring at the Cannes Film Festival. Set against a landscape of X-ray imagery and anatomical reimagination, the film follows a mother and her children’s struggle for survival.

Both films were supported by DePaul’s Project BlueLight production company, which pairs faculty and students on professional productions.

CINEYOUTH SUCCESSES
SCA students achieved outstanding results at the 2019 CineYouth competitions sponsored by Cinema Chicago. Emily Gray and Grace Golembiewski were two of the four finalists in CineYouth’s Film Pitch, with Gray winning for her project “The Scholar.” Connor O’Keefe won CineYouth’s Chicago Award for his film “Our Transition,” and Don Josephus Raphael Eblahan won the Best Experimental award for “Umbilical Cord to Heaven.”

END-OF-YEAR STUDENT SHOWCASES
Undergraduate and graduate students showed off their work, including research, films and animations, games, user-experience and graphic design, last spring at the following events: Graphic Design/DCMA (Digital Communication and Media Arts) Showcase, Schools of Computing/Design Research Symposium, Game Capstone, Premiere Film Festival and UxD (User Experience Design) Showcase.

BADGES OF HONOR
The Idea Realization Lab was commissioned last spring to create 1,700 custom badges for THOTCON, the Midwest’s largest hacking conference. The interactive badges, designed and coded by students in the maker space under the guidance of faculty members Jay Margalus and Rudy Ristich, contained an alternative (screenless) interface with a circuit board that played a video game.

HEAVY METAL GUITAR
School of Design Assistant Professor Nathan Matteson and his design company, Obstructions, received a gold medal in product design at the International Design Awards for their new, all-aluminum bass guitar. The slender instrument, which features a removable fretboard, increases frequency range, sustain and noise reduction while also emphasizing player accessibility and durability.
Redar Ismail, a PhD candidate in computer and information sciences, hasn’t watched TV since 2004. He doesn’t go out much, preferring to spend most of his time coding software apps designed to help immigrants, refugees, low-income communities and schoolchildren.

His laser focus has reaped rewards. In 2018, Ismail and Badar Al Lawati, a fellow PhD candidate at CDM, won the Campus1871 competition hosted by 1871, Chicago’s prestigious entrepreneurial technology hub. Ismail and Al Lawati are now building out their winning entry, a hiring platform for refugees with degrees and experience in STEM fields, thanks to a $100,000 credit grant through the Google Cloud Platform for Startups program. They call their platform BridgeLink.

“America has a need for STEM professionals, even while many refugees who are engineers and doctors are Uber drivers or waiters,” says Ismail. “Employers often don’t realize refugees have already been vetted and are here lawfully. Let’s give them a chance. If you’re a good engineer in Iraq, you’ll be a good engineer here, too.”

Ismail’s empathy is driven by shared hardship. As a Kurd growing up in Iraqi Kurdistan, where his father is an engineer, he witnessed a genocide under Saddam Hussein’s Ba’athist regime that killed as many as 182,000 Kurds from 1980 to 1991—although mass graves are still being discovered, says Ismail. When Ismail was 7, Iraq’s armed forces bombed the autonomous region’s capital, Erbil, where he lived with his parents, sister and brother.

“There were a lot of executions,” says Ismail. “The streets were filled with bodies.”

Ismail became ill from the fallout of chemical-weapon attacks in the area. Forced to receive treatment in Baghdad with countless other victims, he recalls being crowded into a truck and soldiers at checkpoints pouring dirty water on the passengers and burning them with cigarettes.

“One hit me with a cable so hard I couldn’t sit for a week,” says Ismail. “I was 10 years old.”

The family fled to Syria, finding mutual support with other Kurdish refugees in Damascus, then briefly lived in The Netherlands before returning to their homeland. Ismail earned an undergraduate degree in software engineering and worked in IT at the regional government’s Ministry of Martyrs and Anfal Affairs, which aids genocide survivors. In 2012, he met representatives from DePaul who were visiting the region. Supported by a Kurdish government scholarship, Ismail moved to Chicago, where he earned an English language certificate and an MS in e-commerce at DePaul.

In 2014, midway to his master’s, he went home for a family visit only to retreat quickly when ISIS launched a genocidal campaign in the region against the Yazidis, an indigenous ethnic Kurdish minority that practices a gnostic faith.

Ismail seems remarkably stoic in the wake of tragedy and discrimination, but says sleepless nights are common. He finds therapy in projects that help others.

In 2017, he created an augmented-reality, interior-design HoloLens app as part of the winning team at Chicago’s BuiltWorlds Hackathon. This past spring, he was part of DePaul’s winning team at the Greater Chicago Food Depository’s Hackathon to End Hunger, which proposed a system to provide disabled people better access to food distributors. He’s also helping Associate Dean Theresa Steinbach, his PhD supervisor, develop a STEM-oriented framework for teaching computer science to middle schoolers.

In addition to Steinbach, Ismail credits CDM technical staff Anthony Zoko, Kuo Lun Tye, Yiding Wang, Michael Washington and Richard Razo for teaching him software development skills. Zoko, an adjunct professor and software development manager, also sponsored Ismail’s CDM assistantship, which helps him cover tuition.

Ultimately, Ismail hopes to start a software engineering firm that employs students and immigrants, but he won’t speculate on the products they’ll design.

“Never obsess about today’s technology, because it will be obsolete before you know it,” Ismail says. “I do not like limitations. Everything can change.”
Stay connected to DePaul through our online communities, including Facebook, LinkedIn, Twitter, Instagram, Flickr and YouTube. Visit alumni.depaul.edu to sign up today.

Visit the Richard M. and Maggie C. Daley Building to see “Merry Christmas from DePaul,” a stop-motion-animated short film looping in a 3D window display at 247 S. State St. Created by the School of Cinematic Arts in collaboration with the Division of Mission and Ministry, its stars of wonder, paper ballerinas and gingerbread forests celebrate the magic of the season.