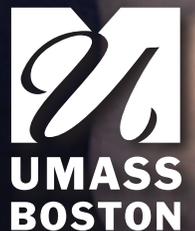


INFORMATION TECHNOLOGY | 2019

OUTCOMES

OPPORTUNITIES | COLLABORATIONS | RESULTS



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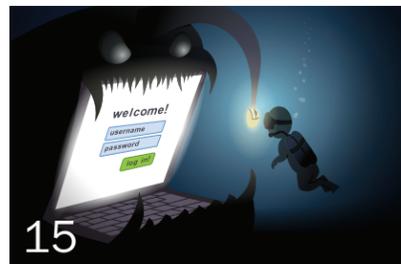
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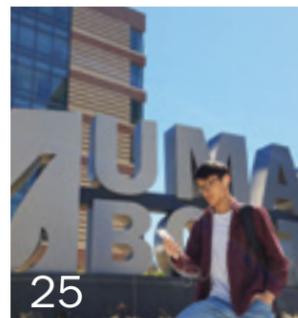
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Information Technology Outcomes (IT Outcomes) is a magazine highlighting the many collaborations between IT and members of the UMass Boston community.

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“Coming together is a beginning; keeping together is progress; working together is success.” —Henry Ford

IT Outcomes 2019 is tangible evidence of what happens when individuals come together, stay together, and work together to serve the common good. With respect to information technology (IT) at UMass Boston, that means serving students, faculty, and staff to the very best of our abilities.

Collaboration, then, is key to achieving successful outcomes when an opportunity to serve presents itself. And as the stories herein illustrate, members of IT collaborated not only with one another, but also with faculty and administrators, all to benefit our students.

Recognizing these opportunities and building these successful collaborations are key to moving forward in any team endeavor. Certainly, opportunity may bring about change, but I believe change must be seen as a chance for good to take hold. With patience and fortitude, I believe good begets good, and success is the result of a team of individuals working together toward a shared vision for the future.



As UMass Boston's new vice chancellor for IT and chief information officer (CIO), I quickly came to learn that IT is made up of very strong and talented teams with good capabilities, all positioning us well for future success and growth. So, together, we will embark on a shared visioning process, with an eye toward delivering superior service in line with the university's strategic plan.

What you are about to read is the essence of IT's collaborative results—very impressive and successful collaborative results. Members of the UMass Boston IT organization can be very proud of their accomplishments. From here, we will build on these successes and, working together, we will move IT to an even more successful place.

Raymond Lefebvre
Vice Chancellor and CIO



Ally to the Rescue

Ally and Accessibility

Sometimes a name says it all. For example, an “ally” is a friend, an assistant, and a partner. Pair “ally” with “accessibility” and what you have is a software solution that helps individuals with disabilities access online files, photos, and documents with ease.

“Ally is an accessibility tool,” says Paula Thorsland, senior instructional designer and interim manager of eLearning and Instructional Support (eLIS). “It’s an add-on to Blackboard, the university’s learning management system, which is an artificial intelligence software developed in Denmark. The software automatically checks course documents placed in Blackboard and looks for common accessibility issues.”

Not only does the software check for accessibility standards, it scores what it finds and offers guidance on how to make repairs to bring the document up to an acceptable level.

“The biggest problem we have is people think that because they can see the text, everyone can see the text,” says Thorsland. However, if someone has posted a photo of text, for example, rather than a text document, assistive technology equipment cannot help. The post is blank. No chance someone will read it; no opportunity to search it; no ability to copy and paste desired information. The post is just blank.

If, on the other hand, a document is accessible to begin with, students have options that allow them to choose alternative formats. Nice.

Once Ally was fully deployed in Blackboard in fall 2018, it reviewed and scored more than 110,000 documents, of which 7,514 were scans. The eLIS team was overwhelmed by the very thought of managing such a volume of work, but with a little creativity, even the most daunting challenge can be overcome.

In this case, the solution came in the form of student collaborations. Thorsland created a SWOT (Strengths. Weaknesses. Opportunities. Threats) team composed of students funded by the Office of Diversity and Inclusion. Rather than ask faculty to review their online documents, they asked the students—who, after all, are the end users—to conduct the research from a student accessibility perspective. Their task? Assess what was not working and repair it.

As members of the four-person SWOT team, Rachel Liang ’20 and her colleagues first received training in how to think out a problem and what to do when a problem was found. Team members then reviewed documents, identified problems, and resolved them whenever possible. “Format was often the problem,” says Liang. “When we found an issue, we fixed it,” she says, promising more improvements to come.

Collaboration with individual faculty members went smoothly. “Faculty were very appreciative of our work,” says Liang, and, by the same token, we can safely assume that

SWOT team members were appreciative of the opportunity not only to assist faculty but also to learn skills.

The SWOT team repaired more than 370 documents and helped to improve 15 online courses from among those with the lowest accessibility scores.

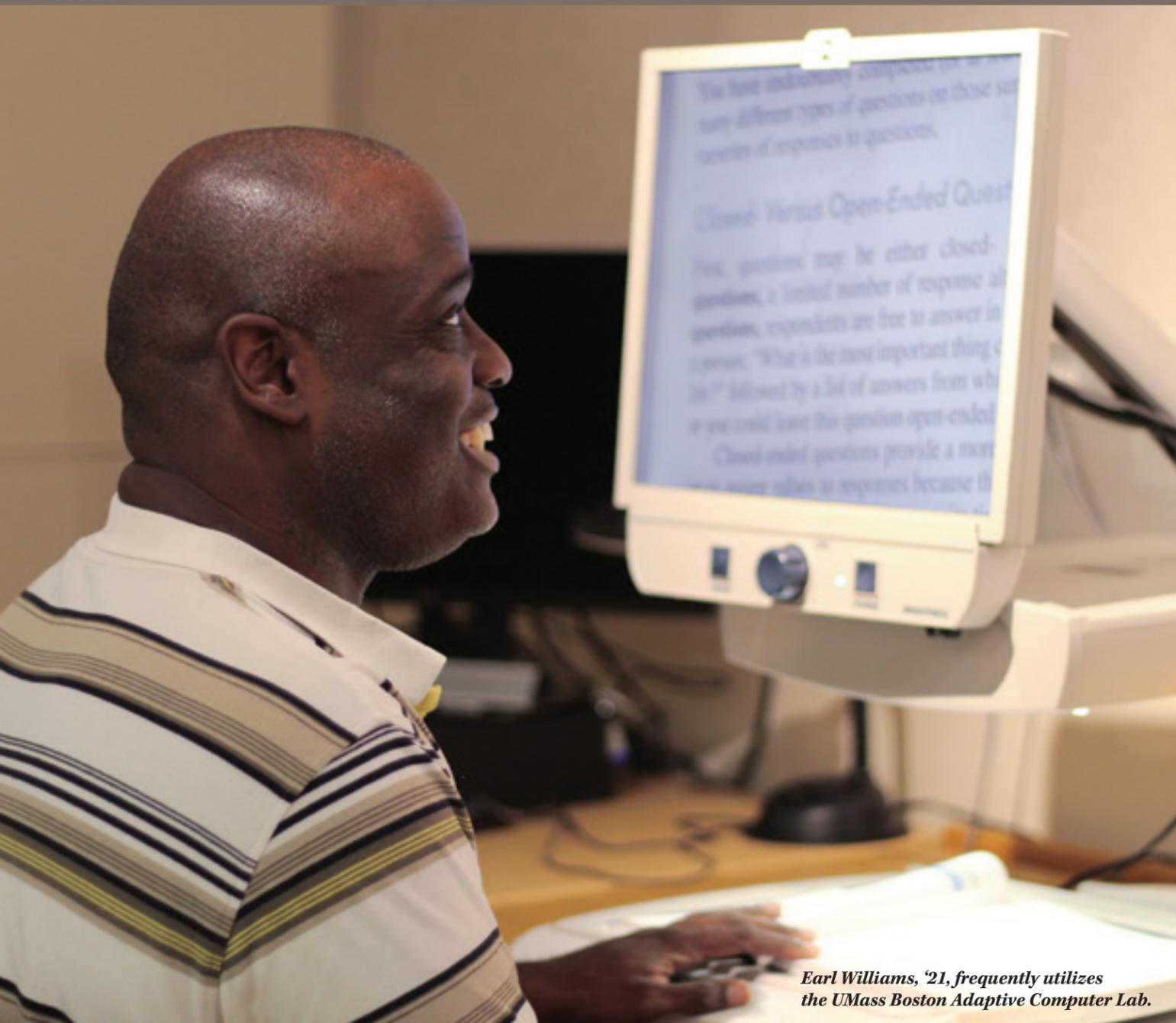
Thorsland says that using the SWOT team approach was a useful learning experience for her team. “We gained great insight by having students find and improve documents that professors were using in an inaccessible way.”

Indeed, Ally is proving quite successful. Says Thorsland: “After the deployment of Ally, the accessibility rating in online courses increased from 49 percent to 73 percent.”



Designed to Excel

Adaptive Computer Lab



Earl Williams, '21, frequently utilizes the UMass Boston Adaptive Computer Lab.

Equal access is not an empty promise at UMass Boston but, rather, a firm commitment—which brings us to the university's Adaptive Computer Lab and the specialized software and hardware programs available to all individuals with disabilities.

Speech to text, text to speech, 27-inch monitors and large-size keyboards with high-contrast letters for individuals with low vision, greater magnification, auditory playback, adjustable lighting and seating are among the assistive technologies available. The goal, as described in the lab's mission statement, is "to maintain, increase or improve the functional capabilities of individuals with disabilities."

Matt McCubbin is the IT accessibility coordinator in Lab Operations under Client Services. "We're constantly evaluating our specialized software programs, making sure we provide the tools and technical support needed," says McCubbin.

This support is not limited to those individuals who frequent the lab. McCubbin also collaborates with Valerie Haven, academic technology coordinator in the Ross Center, "a resource for the UMass Boston campus community ensuring academic access and inclusion for students with disabilities."

"Valerie and I work back and forth finding technology solutions to a variety of challenges," says McCubbin. "I supply the tech support and Valerie adds that academic perspective."

"Matt and I often meet to brainstorm technology solutions for our students with disabilities," says Haven. "We share information on new forms of

technology along with what we like or do not like about certain applications."

Earl Williams, '21, utilizes the Adaptive Computer Lab on a regular basis. Williams is legally blind and finds the screen magnifier Zoom Text and large-size keyboard extremely helpful. He also uses CCTV, which allows him to place a book under a magnifier that, in turn, enlarges the page on the monitor.

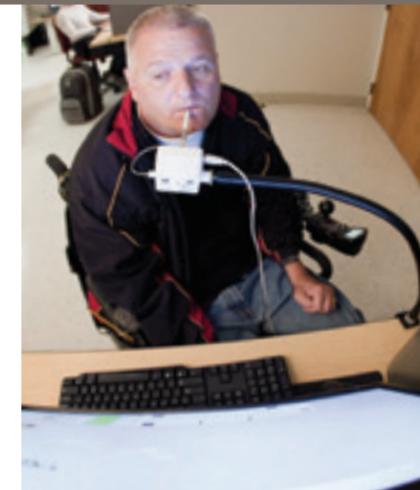
When and if Williams encounters a problem, McCubbin is there to help. "Matt is the go-to person," says Williams. "He knows everything and, if he doesn't, he'll find someone who does. He's made it easy for me. He's patient, and I'm very grateful for all he does."

"We're constantly evaluating our specialized software programs, making sure we provide the tools and technical support needed."

—Matt McCubbin, IT accessibility coordinator in Lab Operations under Client Services

However, any story on UMass Boston's adaptive computer lab must, rightly, flash back to its origins and former UMass Boston staff members Charlotte Corbett and Donna Hill. Corbett wrote the grants, Hill researched adaptive technologies, and little by little the Adaptive Computer Lab at UMass Boston came to be.

But long before the lab was up and running and fully equipped, Dann Brown enrolled in the university. A quadriplegic as a result of a car accident while serving in the United States Marines, he found



Dann Brown, Adaptive Computer Lab supervisor, offers ongoing support to students with disabilities.

himself unable to access computers in the public lab and was unsure how to proceed.

"One day, I was wandering on the lower level of the Healey Library, and I stumbled on a lab where I saw a student tapping a computer with a stick in his mouth," says Brown, who entered the lab and asked some questions. That was the beginning of his relationship with Hill and the Adaptive Computer Lab. He frequently used the somewhat limited technologies then available in the fledgling lab and says, "I hung out and learned so much that they offered me a job as a student consultant."

Time passed. Brown graduated. The Adaptive Computer Lab came of age. And Brown is now computer lab supervisor in IT Lab Operations. What hasn't changed over the years is Brown's ongoing support for students with disabilities.

"At the time, the UMass Boston Adaptive Computer Lab was the first one of its kind at any college in our country," says Brown with pride—pride that rightly can be shared by members of the entire UMass Boston community, past and present, a true testament to the university's commitment to equal access for all.

A Reflection of Our Times

Mirroring 360

It's a simple concept. Mirrors reflect. In this case, Mirroring 360 is a wireless presentation tool that allows any faculty member or student to wirelessly connect a Chromebook, iPad, iPhone, Android device, or Windows or Mac laptop to the classroom AV display system via the classroom computer. More simply put, Mirroring 360 reflects what's on your personal device onto the resident computer with no cables required.

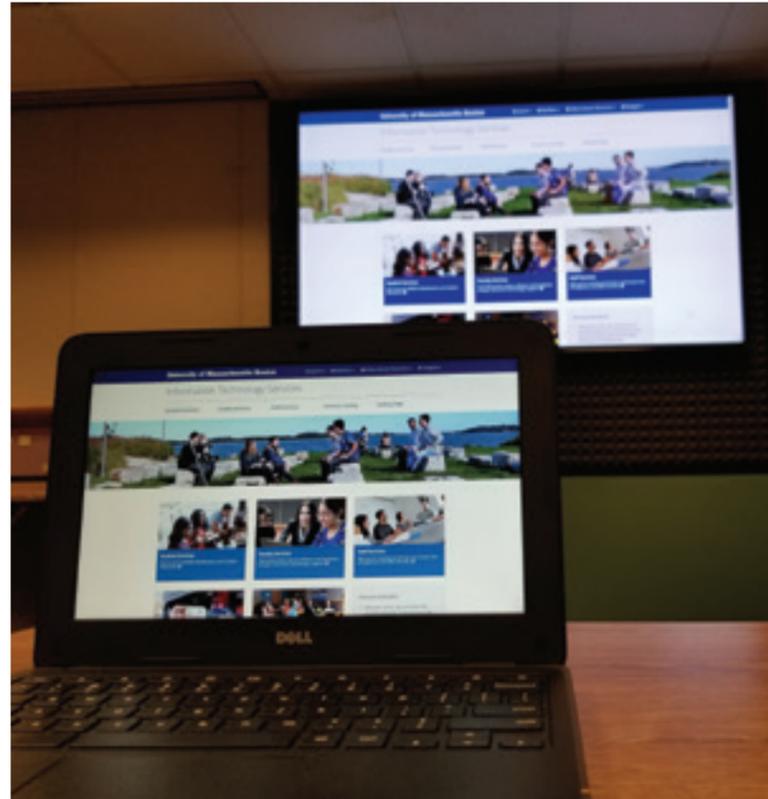
Once connected, a faculty member can walk around the classroom with his or her device and display content without being tethered to a wire, and students can share information with faculty or classmates from their seats. "This is an excellent tool," says John Jessoe, manager of Classroom Technology and AV Services. "It was an economical way to give our faculty the ability to connect wirelessly, not only in their classrooms but also in our auditoriums."

In the spring of 2019 several faculty members approached the classroom technology group asking for a way to wirelessly share information in the classroom, and especially in large lecture halls, where faculty often use iPads and Surface tablets. "Over the summer, we started investigating the technology," says Zack Ronald, an academic technology specialist. "We needed something that was cost effective and, importantly, didn't require a lot of audio or video programming. Ray (Lefebvre, vice chancellor for Information Technology and CIO) suggested we take a look at Mirroring 360."

Ronald contacted several companies and invited them to demo their products remotely for UMass Boston. "Alison Murray, a network security specialist, and Scott Gilbert, a network engineer, helped engineer the best solution for UMass Boston. Both were instrumental in helping this project get off the ground," says Ronald.

After exploring several other products, one of which was not compatible with Android devices and, therefore, was immediately eliminated, the team selected Mirroring 360. "We wanted something that worked with all devices and was 100 percent available for any faculty member to use," says Ronald.

IT rolled out Mirroring 360 in 24 large classrooms and presentation rooms at the start of the fall 2019 semester, a task



which required the classroom technology team to manually install the software on the resident computers in the classrooms where it would be utilized. The response to date has been positive.

Steven Cullipher, associate lecturer in the Chemistry Department, is a Mirroring 360 fan. Cullipher teaches his General Chemistry I course in a large lecture hall with up to 130 students in attendance. "What I like about Mirroring 360 is I can roam around the lecture hall with my iPad in hand," he says. "I use Mirroring 360 to project images from my iPad onto the overhead projector, and I'm in complete control of my slide show, making notes as I go."

Another major plus of the software solution speaks to class participation. "My moving around helps to facilitate discussions with my students," says Cullipher. "I can get all the way to the back of the hall and answer questions. And I think students are more apt to ask questions when I am more accessible to them."

Jessoe is pleased with the faculty response to date and looks forward to adding more classrooms. "It's early yet," he says, "but I think Mirroring 360 is going to be a big hit."

Talk About a Restart!

Computer Upgrades

In the world of computers, five years can seem like a lifetime. So when the computers in four of UMass Boston's multipurpose academic labs reached their golden years, IT faced a staggering challenge—how to replace 181 outdated computers with state-of-the-art new ones, relatively quickly, and, just as important, as economically as possible.

With a little old-fashioned creativity and know-how, the lab operations team in IT Client Services rose to the challenge. "It began as an experiment," says Max Razdow, a lab operations manager. "We were looking for an economical way to save these aging computers. So we asked ourselves, 'What would happen if we put new solid-state drives (SSDs) into the old computers?' We tried it—and saw a remarkable change."

Indeed, "remarkable change" is an understatement of what occurred. "Swapping the hard-disk drives with solid-state drives, we transformed the 181 slower machines into high-speed modern computers able to handle new processing-intensive operating systems with ease," says Razdow.

Binh Ly, a systems specialist in IT Ed Tech and Learning Commons, explains why. "Our legacy hard drives are mechanical, and mechanical drives have moving parts. The new solid-state drives have

no moving parts, meaning there is no issue of mechanical failure," says Ly. "Also, their electronic drive operation is much faster, with better overall performance. Start-up time alone decreased from three and a half minutes to around 30 seconds."

Not only did Razdow and colleagues' experiment work, but the solution saved the university upward of \$200,000, a rough estimate of the cost of 181 new computers.

The transformation was accomplished over a two-year period. Last year, IT upgraded 65 computers in the purple and gold labs. This year, 116 computers in the blue and white labs, plus the fourth-floor open-computing area in the Healey Library, received a total refresh.

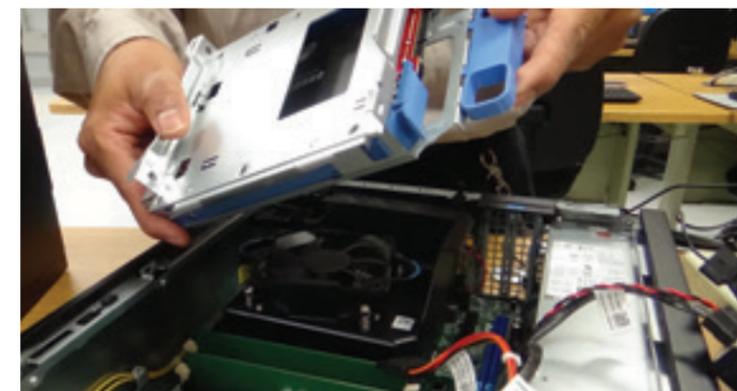
Several IT staff members were involved in the project. Ananta Sinha, a supervisor in Computer Operation Systems and Services,

managed the process of physically replacing and re-imaging the drives; Henry Lay, supervisor of iOS and Virtual Lab, spearheaded testing; and Matt McCubbin, IT accessibility coordinator, and Ly helped with research, comparing available SSD models.

"Watching this shift was exciting," says Razdow of the project, which he describes as a seamless process thanks to the IT staff members and their focus on teamwork.

"Swapping the hard-disk drives with solid-state drives, we transformed the 181 slower machines into high-speed modern computers able to handle new processing-intensive operating systems with ease."

—Max Razdow



Fit for the 21st Century

HUMANITIES HUB

Steve Jobs is not the only person to have believed that technology alone is not enough. Count UMass Boston in. Add the Mellon Foundation. Include a little creative collaboration between IT and the College of Liberal Arts, and what you get is a Humanities Hub fit for the 21st century.

It all began in late 2018 when the Mellon Foundation gifted UMass Boston \$515,000 to create high-impact humanities programming. David Terkla, dean of the College of Liberal Arts, hit the ground running and, thanks to collaborations with staff members in both IT and the Facilities Department, UMass Boston's Humanities Hub is well on its way.

"I'm thrilled with how quickly this all came together," says Terkla. "It took shape when our new vice chancellor for IT, Ray Lefebvre, jumped right on it. Together, we discussed what kind of equipment we'd need and how best to set it up. In the course of our discussions, Ray introduced me to the Google Jamboard. I wasn't familiar with this interactive whiteboard, which is perfect for students working in groups, brainstorming, or sharing presentations."

Terkla also gives a shout-out to John Jessoe, manager of Classroom Technology and AV Services in IT Communications

and Infrastructure Services. "John was exceptionally helpful in getting the equipment," says Terkla.

"I worked closely with David to understand his needs," says Jessoe. "David envisions the Humanities Hub as a shared space. So we needed to choose equipment to accommodate a variety of uses. Together, we decided on an AV system with a resident computer and teaching cart. We also decided to add a Google Jamboard."

When space on the eighth floor of the Joseph P. Healey Library was identified as the hub's home, Joseph Corkery, a project specialist in the Facilities Department, joined the team. He handled the bid process for painting the space and laying the carpet. Corkery's responsibilities also included overseeing electrical work and whatever else was needed from a facilities standpoint.

"Early on, we had meetings with everyone involved," says Corkery. "Dean Terkla and a couple of people from his office, John Jessoe, Jamie Soule—we planned it all out together. It was an experienced team, and everyone knew their role and what to do."

The formal title of the Mellon grant is "High Impact Humanities: Connecting Curriculum, Community and Careers for Student Success," a lofty title with worthy goals. So, what exactly does this mean?

"Think of the Humanities Hub as a humanities incubator," says Terkla. "By providing seed funding and pedagogical training for innovative humanities teaching, faculty will be encouraged to create new high-impact courses. We've already developed 24 new courses and are in the process of creating an upper-level curriculum to help students experience the dynamic creativity, analytical thinking, and cultural engagement that is central to the humanities."

Given Boston's standing as a social and cultural hub, Terkla says plans include integrating classes within the local community. Site visits, hands-on research, and museum and library partnerships will be built into the curriculum, helping students understand problems from a humanities perspective.

"The way this project evolved is exactly the way any project should evolve," says Terkla. "IT and the academic side of the house collaborated to benefit our students. IT listened to what we were trying to do and looked into innovative ways to make it happen."

"It is in Apple's DNA that technology alone is not enough—it's technology married with liberal arts, married with the humanities, that yields us the results that make our heart sing."

—Steve Jobs, cofounder of Apple



Strength in Numbers

High-Performance Computing

For most of us, one computer suffices. We've got it all—operating system, processor, memory, and we're up and running. For some, however, only multiple computers will do, and that's where high-performance computing answers the call.

Simply put, high-performance computing involves a collection of computers that work together to solve a problem. This is known as a computer cluster, which might be thought of as similar to a server. UMass Boston has two such clusters on campus. One cluster has nine computers, referred to as nodes; the other, 36. A third cluster, located at the Massachusetts Green High Performance Computer Center in Holyoke, Massachusetts, offers researchers 13,000 processors.

A cluster can handle far more complex data operations in far less time. Jeff Dusenberry, director of Research Computing, says IT staff members maintain the clusters and are available to troubleshoot any issues that come up while researchers conduct their work.

High-performance computing is available to faculty in diverse disciplines. "Not every job is suitable for high-performance computing," says Dusenberry. "It has to be a job that can break down into smaller pieces and do that efficiently. And different topics are handled differently. In some biology analyses, for example, you might tell each computer to do the same thing but with different data."

In the end, based on the parameters input by researchers, the cluster will bring the data back together and calculate the results.

Chemistry professor Jason Green supervises a team of researchers, including two postdoctoral researchers, three graduate

students, and two undergraduate students, "all trained in some way or another by Jeff," says Green.

In Green's case, high-performance computing is used to answer very carefully crafted questions about chemical systems. "By simulating models of these systems, we test hypotheses, refine our models, and make connections between theory and experiment in order to develop high-fidelity predictions," he says. "Model building

and simulation are essential to determine which details of a chemical system are important and which can be neglected."

Sound complex? Think of it this way: one person, working with one computer, is limited by the speed at which their computer can process data. For certain problems, calculations could take years or decades on a single processor. By running calculations in parallel across many different processors, that time can be reduced to a few hours or weeks.

Green and his team of researchers work with a computer cluster and ask intensely complex scientific questions. "We do projects where calculations can span months, even years, on our computer clusters," says Green. "These calculations

are way beyond the capabilities of a single computer."

The bottom line here is that high-performance computing can save days, weeks, or more of research time by parsing out different elements and components of the project to different nodes in the cluster. Throughout the process, Dusenberry and his team are available to lend a hand when a hand is needed.

"Jeff and his team have spent countless hours troubleshooting hardware and software issues, training students, and maintaining the clusters," says Green. "Jeff is extremely important to the success of our research."



2019 IT Student Leadership Awards

Star Performers



Yogi Bhatt, '19; John Jessoe, Classroom Technology Manager



Lucille Nguyen, Lab Operations Student Supervisor; Michael Panchu, '20



Devin Murchison, '20; Peter Adams, Service Desk Supervisor



Michael Khouri, '22; Alison Murray, Senior Information Security Specialist



Christopher Rennie, Audio Video Office Supervisor; Nik Costello, '21

A little appreciation goes a long way, so imagine how far a lot of appreciation can go! And a lot of appreciation is what members of the UMass Boston IT Department have for their student workers.

Launched in 2015, the IT Student Leadership Awards recognize outstanding work and valuable contributions made by a student employee. Staff members in each IT office get together to agree on one exceptional student to nominate for the award. Given the quality, skills, and work ethic of IT's student employees, many, if not all, are worthy of such recognition, making the selection process a difficult one.

The challenge is that effective leadership is about so much more than talent and skills, though both are essential. Effective leaders are also motivators of self and others and understand the importance of working hard to achieve stated goals.

The 2019 IT Student Leadership Award winners include Lina Cruz-Benavides, '20; Yogi Bhatt, '19; Nik Costello, '21; Damla Fari, Donna Kimmel, '21; Michael Kohouri, '22; Chaolin Mei, '20; Devin Murchison, '20; and Michael Panchu, '20; Nicholas Trefonides, '20.

Nomination letters for each of these award-winning students speak to how the nominee demonstrates the qualities of an effective leader, as illustrated by the following two excerpts.

John Mazzarella, manager of Training, Communication and Marketing, says, "Lina Cruz-Benavides brought such amazing creativity and talent to her work with the IT communications and marketing team ... I came to rely on being able to present an early idea to her and, together, we would flesh it out into a solid plan. In the end, the projects she worked on became the best implementation based on our combined ideas ... Lina is a valued member of my team and a great benefit to the IT Department and the university."

In nominating Donna Kimmel, one of The Makerspace student employees, Mazzarella says, "Donna consistently does an exceptional amount of good work for The Makerspace, in both quality and quantity."

Then there is Yogi Bhatt, who has worked for IT's Classroom Technology and AV Service Department as a classroom technology support technician and student leader since fall 2015. Rosa Oculito, instructional media specialist and supervisor, shares an impressive list of tasks performed by Bhatt.

"Yogi's duties are to provide instruction, consultation, and technical support for faculty, staff, students, and external clients engaged in using a wide variety of audiovisual and technology in classrooms, auditoriums, and conference areas," she says, adding praise for Bhatt's technical skills and customer service.

In the three days building up to the awards ceremony, which takes place annually during National Student Employment Week, each IT student employee is personally thanked. Salina Allen-Sharpp, executive assistant to the vice chancellor for information technology and CIO, created the Student Employee Recognition Program several years ago.

The tokens of appreciation were hand-delivered and creative. Day One, students received a small gift box with their name and a hand-written note that read, "IT appreciates you to the moon and back." Inside this gift box? A moon pie.

Day Two, the message read, "Great customer service is how we roll. Thank you." Inside that gift box? Two Tootsie Rolls tied with ribbon string.

Day Three, the message was simple and to the point. Each student's full name was printed on a label with the words "You Rock!"

The label was placed on one pack of Pop Rocks in three different flavors.

"Each trinket was hand-delivered to each of IT's 80 student employees," says Allen-Sharpp, a simple gesture to acknowledge jobs well done.

On the fourth day, all IT student employees were presented with certificates of appreciation. The winners of the IT Student Leadership Award were announced and presented not only with a certificate, but also with a crystal award engraved with the words "With our greatest appreciation, the IT Department at UMass Boston hereby presents [name of student] the IT Student Leadership Award for outstanding work and valuable contributions made as a student employee."

Additionally, each winner received a signed letter of recommendation, created from the individual nomination letters. The fourth day is a celebration of all IT student employees, who were treated to a student luncheon with pizza, soft drinks, and cake for them to enjoy.

Good Things Come in Small Packages

Raspberry Pi

Picture a credit card. Now picture a computer slightly larger than a credit card. Incredible as it may seem, you've just pictured Raspberry Pi.

This little technological wonder plugs into a computer monitor—or even a TV. Raspberry Pi can do anything your desktop computer or laptop can do. Search the internet; stream a video, play a game, or just tackle the basics—word processing and data analysis. You name it, you can do it. Just pop this little gadget into your pocket, and you're ready to go—provided, of course, you have access to a monitor or TV.

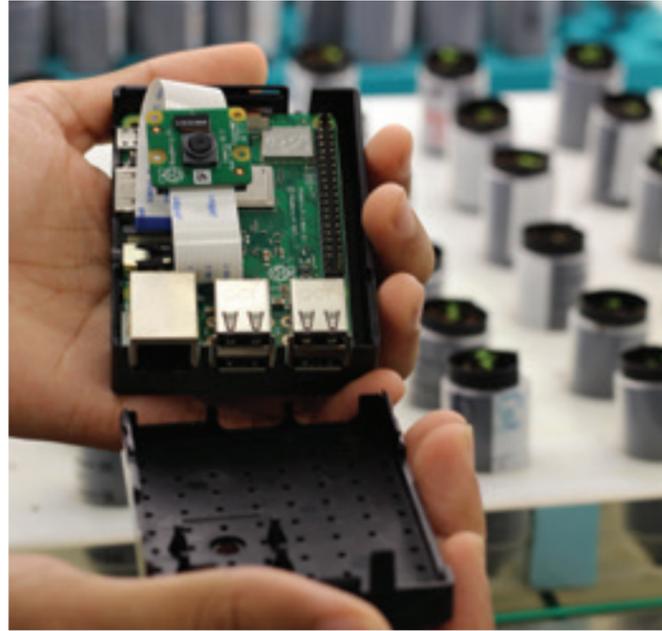
But that's not all. The Raspberry Pi Camera Module is an add-on. It, too, is small but powerful. Just attach it to Raspberry Pi and you're in business.

When UMass Boston biology professor Brook Moyers contacted the IT service desk and met up with Jamie Soule, manager of IT Operations and Telecom, with a request for data cables to be installed in her plant growth chambers, Soule asked for what purpose? Purpose would determine the kind of solution Soule and the campus network and security engineers would devise for Moyers.

The solution was simple. Moyers wanted to monitor plant growth in several of her growth chambers using Raspberry Pi and the Raspberry Pi camera add-on. "The problem was that Raspberry Pi needs to be powered and connected to the internet, both of which can be done with a single Ethernet connection using power over the Ethernet," Moyers says. "But there were only so many Ethernet cables in the plant growth facility, and each Pi needs a dedicated cable."

Soule's solution was simpler still: relocate surrounding and unused Ethernet cables and ports into a single wall jack in the plant growth facility. This would eliminate the need for installing a web of cables across multiple spaces in the Integrated Sciences Complex and ensure that the system could be deployed flexibly across multiple plant growth chambers. This cleared the way for Moyers to install Raspberry Pi and the Raspberry Pi camera add-on. To conduct their plant research, Moyers and her students needed multiple Raspberry Pi computers and camera add-ons.

"I'm interested in understanding why individuals of the same species look different," says Moyers. "We can ask that about hu-



mans, breeds of dogs ... Why does a Great Dane look different than a Chihuahua? I ask that question about plants. To do that, I look at the plants themselves. If I wanted to, and if I had the time, I could go to the growth chamber every day and take photographs. Or, I could program the Raspberry Pi camera to take those photographs for me every day, every five minutes if need be."

Last summer, Moyers collaborated with biology professor Adán Colón-Carmona in an effort to understand how to fight a toxic contaminant called phenanthrene. "We studied the plant *Arabidopsis thaliana*, the plant that we know the most about genetically," says Moyers. "It's used as a model of how a plant works. We're interested in growth and how that growth can be changed. Our ultimate goal is to learn how to pull toxins like phenanthrene out of the soil." To do this, Moyers and Colón-Carmona used the Raspberry Pi camera to monitor the plant growth at different stages.

Moyers is pleased with her collaboration with the IT network and security engineers and Soule's solution to her cable and access challenge. "It was nice working with Jamie and his team," she says. "They were enormously knowledgeable and helpful." Moyers also credited Jeff Dusenberry, director of Research Computing, for helping to keep the project running smoothly. All in all, she says, "IT was very responsive to my needs."

IT's Got Your Back!

Advanced Threat Protection

Remember back in the day when fishing meant a quiet afternoon down by the lake, rod and reel in hand? Throw a "ph" into the mix and, suddenly, it's your personal information on the hook.

But wait. Not so fast. Scamming members of the UMass Boston community is now harder thanks to IT's rollout of Advanced Threat Protection (ATP), a suite of security features available within Microsoft Office 365.

"Available within" makes ATP sound easy, but that's far from the truth.. ATP comprises several cybersecurity features, including anti-phishing, anti-impersonation, Safe Links, Safe Attachments, and External Sender notices. Then there's the Herculean task of installing the ATP features, creating necessary policies, and establishing appropriate alerts. Next comes the pilot program, collaborations with a select group of users, and finally, the rollout.

Jamil Moosavifard, senior systems administrator in IT Communication and Infrastructure Services, along with a colleague, systems administrator Marla Filoso, teamed up with Alison Murray, senior information security specialist in IT Communications and Infrastructure Services, to make it all happen.

"With these safeguards, we can now be more proactive about stopping the fires before they spread," says Moosavifard of the actions taken to protect members of the university community.

Phishing is one such fire. Thanks to ATP and the vigilance of the IT Systems and Security teams, phishing has been drastically reduced at UMass Boston—from hundreds of threats annually to a mere handful.

Safe Links is a fire extinguisher—a behind-the-scenes precaution that forwards an attached link to a Microsoft portal, where

it is quickly scanned for safety. Safe Attachments works in much the same way, although the scan takes a little longer, requiring patience on the part of the recipient. An external sender message alerts a recipient that an email has originated off the UMass Boston campus; anti-impersonation ensures that the sender is

known to the recipient and is not a bad actor. The list of precautions in the ATP suite is lengthy.

Peter Bonitatibus is director of information systems and technology for Student Affairs. As a member of the Technology Information Sharing (TIS) group, he was one of the front-line collaborators offering feedback during UMass Boston's ATP pilot program.

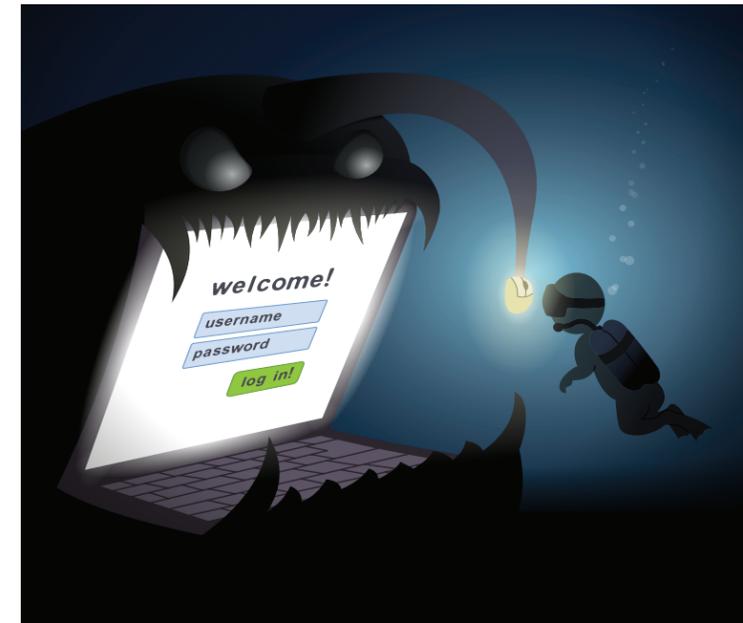
Of his collaboration with IT, Bonitatibus says, "IT staff are very helpful and provide support whenever asked. Also, the new CIO

has reached out to divisional IT staff to better understand our needs, and this has redefined the service model for the IT Enterprise staff, who are more receptive to calls for assistance."

As for the number of threats to members of Student Affairs since ATP was activated there, Bonitatibus says that he is not fielding as many calls. "I would say that ATP has been a success and, hopefully, more features could be added to reduce threats even further," says Bonitatibus.

"It was incredibly helpful to get feedback from our collaborators," says Murray of Bonitatibus and the other members of the TIS team. "We had good conversations and learned how to provide the best protection. All in all, we were a group of people who know what we're doing talking to each other and getting things done."

What's better than that!



Full Speed Ahead

Wi-Fi Improvements



Nothing beats firsthand experience. Just ask Joshua Tendo. Positioned to graduate in 2021, Tendo, an IT major, appreciates that his IT internship will give him that extra edge when he enters the job market. “Once you have your degree and start looking for a job, you need something that makes you stand out from other applicants,” he says. “Employers look for experience. Speaking for myself, the experience I’m gaining working for IT is more valuable than a degree. It’s priceless.”



Not surprisingly, Tendo’s priceless experience is equally valuable to Senior Network Engineer Azadeh Aslani, Tendo’s supervisor. In turn, his contributions are appreciated by members of the UMass Boston community.

“During one of our busiest times on campus,” says Aslani, “we received multiple calls dealing with wireless issues—access, speed, coverage—and we didn’t have the resources to keep up with the demand.” Students rely on and appreciate quick and easy access to the internet.

As fate would have it, at the same time an IT network class participated in a tour around the Data Center coordinated by Jamie Soule, manager of IT Operations. At the end of the tour, Tendo approached Aslani and senior information security specialist Alison Murray to ask about the possibility of an IT internship. The result? A collaboration between Aslani and Murray that would create a shared internship between networking and security.

The timing couldn’t have been better for Aslani. Networking had multiple and immediate needs. Aslani proceeded to train Tendo on how to conduct a wireless on-site survey using the

different techniques and tools used by IT engineers. “Joshua picked up things quickly,” says Aslani. “He’s a talented, passionate student employee.”

“As wireless issues come through the ticketing system, I go to wherever those issues are,” says Tendo. “I talk with the people having the issue, find out exactly what’s happening.” Tendo then uses the tools at his disposal to figure out the problem and find a solution.

Problems, he said, could be something as simple as needing extra access points in an area. At other times, perhaps existing access points are interfering

with each other. Sometimes a department has moved to a new location, so there are more people working in an area. That means more access points are needed.

The challenges are endless; the solutions, always at hand.

Tendo was also instrumental in solving a “spotty bad wi-fi connection” detailed in a ticket from the office of Environmental Health and Safety.

“Joshua promptly made a visit and found out the department had put a new wireless printer in the area,” says Aslani. “This printer was broadcasting on the same channel as our wireless network. Joshua explained the situation professionally and made it clear that we do not allow wireless printing on campus because of the interference with our wi-fi coverage.”

Bottom line, says Aslani, “Joshua is thirsty to learn. He’s a smart student, and we are happy to have him as a valuable asset in our department. This is a win-win situation—for him and for the whole UMass Boston community.”

Students rely on and appreciate quick and easy access to the internet.



An Eye on Crime

Vietnam War Memorial Protected

Donald Foye, senior network engineer in IT Communications and Infrastructure Services, enlisted in the United States Navy in 1967. Assigned to the *USS Enterprise* and attached to a jet fighter squadron, Foye served 18 months in Vietnam.

So when Foye learned of the vandalizing of the Vietnam War Memorial on Morrissey Blvd. in Dorchester, it was personal. Jamie Soule, manager of IT Operations in IT Communications and Infrastructure Services, was equally outraged.

“I realized it wouldn’t take much to mount a small surveillance camera at the site of the memorial,” he says. He thought that if the memorial was vandalized a second time, a camera could help police identify a suspect.

Soule proceeded to put together a team that would prove well-suited to the task: UMass Boston Chief of Police Donald Baynard; Boston City Councilor Frank Baker; IT’s Donald Foye; and Sullivan & McLaughlin, an electrical and technologies contracting company based in Boston.

The logistics of mounting the camera were complex. For starters, the memorial is situated on a state-owned road, so Councilor Baker was instrumental in paving the way for the project to proceed, also

arranging to get Sullivan & McLaughlin to donate labor and wireless equipment. Eversource Utilities provided electrical services free of charge.

And, of course, UMass Boston’s IT division, spearheaded by Soule, handled the technology back on campus.

The result: a small camera with an antenna was installed on a light pole situated at the site of the memorial. This antenna points to a second antenna, mounted on the roof of the Joseph P. Healey Library on the UMass Boston campus.

“As a Vietnam veteran, it meant a lot to me to be able to help with this.”

—Donald Foye, senior network engineer



City Councilor Frank Baker and members of the memorial committee, UMass Boston, and Eversource gather around the Vietnam Memorial on Morrissey Boulevard.

“Don connected the wireless antennas to the wired campus network,” says Soule, adding that the task was much more involved than met the eye.

“As a Vietnam veteran, it meant a lot to me to be able to help with this,” says Foye. “It was a great team effort with UMass Boston, the town of Dorchester, and the vendor.”

Sadly, the memorial was indeed vandalized a second time. However, images from the security cameras helped to identify the suspect.

Proud of the efforts made by each member of the UMass Boston team, Soule says, “I was the quarterback, but everyone on the team agreed that installing the cameras was well worth the effort it took. We all recognized that vandalizing a war memorial was disgraceful, but we all pulled together to make this happen.”

One Thing Leads to Another

Urban Scholars

Way back in 2008, Ellen Fleming, director of corporate and foundation relations in University Advancement, collaborated with Lisa Link, senior web designer in IT Application Services, to create a website to celebrate the 25th anniversary of Urban Scholars. A program of UMass Boston, Urban Scholars is committed to helping high school students “build the skills, muster the drive, and live the experiences that will ensure their success in college.”

Fleming and Link’s collaboration led to the decision to assign building the Urban Scholars website to the students—which led, in turn, to the scholars producing a video; which led to the birth of UMass Boston’s YouTube channel and its very first upload, “Urban Scholars Interview Dr. Charles Desmond.” Together with Joan Becker, now vice provost for Academic Support Services, Desmond launched the program back in 1983 when he was vice chancellor for Student Affairs at UMass Boston.

At the time, Fleming was developing marketing materials in an effort to promote more awareness of the program and generate additional financial support—hence, the 25th anniversary website. “Lisa and I complemented each other well,” says Fleming. “I was interested in the content and in finding ways to inject the student voice. I wanted their perspective. From a technology perspective, Lisa knew how to make it all work.”

Fast-forward a few years to the launch of the Summer Youth Blog, a collaboration between Web Services and Urban Scholars with input from the Communications Office. “We’re going on the eighth year with the Summer Youth Blog, which is a core project of the IT Urban Scholars internship experience,” says Link. “The blog involves writing and photography, editing, picture loading, and social media.”

Urban Scholars alum Tremel Griffith not only participated in the program for several years, he also had the opportunity as a high school senior to return to mentor the Urban Scholars, helping them to learn procedures to manage their blog, and to add content and photographs.

“My participation in the Urban Scholars program taught me the value of an education,” says Griffith. “The program’s investment in urban education impacts the lives of young people who probably would not have those opportunities otherwise. It changes the lives of the disenfranchised. It definitely influenced the work I do today in



(l-r) Back in 2015, Tremel Griffith, Rosie Feliz, Anny Thach, and Philip Tran met to plan the Urban Scholars Summer Youth Blog, now a core project of the program.

my current job with Steppingstone Foundation in Boston, an organization that works with youth to help them get to college.”

Jamie Morrison, director of Urban Scholars, works with the John Hancock Internship Program’s MLK Scholars to place students in internships that best complement their interests and skills. Lisa Link is one of Morrison’s site supervisors at UMass Boston.

Link, who received the 2019 Chancellor’s Staff Achievement Award for her contributions to the university, devotes time to the program each week during the summer. Of her supervisor, Linda Modiste, assistant vice chancellor for Application Services, Link says, “Linda has given me lots of freedom to devote as much time as needed to help these students with web design, trainings, and whatever else they might need. And while IT’s support is huge, Urban Scholars also collaborates with members of the UMass Boston communications team.”

“We’re overjoyed to have the Urban Scholars with us,” says Modiste. “They have fun, we have fun. And they learn a lot. We don’t just bring them in to do filing. These students work with live content.”

Morrison agrees. “This is an opportunity for students to get direct work experience, to build new skills or improve on the ones they already have. It’s their chance to work with a professional in the field. Their supervisors help them navigate the professional network and build their resumes for college or future job applications.”

Unified Communications Program PBX to VoIP

To the uninitiated, information technology can seem a little bit like alphabet soup. In this case, the Unified Communications Program, a seven-year program, replaced the current copper-based phone system (PBX) with the new Voice over Internet Protocol (VoIP). The core of the project was the introduction of the MX1 phone system to replace the copper switching stations (LIM); implementation of a new phone billing system to replace the end-of-life system; replaced 2,800 traditional phones with the new Session Interface Protocol (SIP) phones; and upgraded the voicemail system and, in doing so, brought UMass Boston into the 21st century.

What that means to the average telephone user is: business as usual, but with enhanced functionality. What that meant for the IT professionals executing the conversion was a grueling multi-year effort and collaborations with all campus departments to achieve the changeover as seamlessly as possible.

At the risk of oversimplifying, this multi-year program moved the old PBX outdated technology to the new voice-over-internet protocols (VoIP) phone system.

“We moved away from copper telephone lines to the internet, which replaced the core functionality of how we do telecommunications,” says Terry Phalen, director of IT Project Management.

To give an idea of the complexity of the old system, 24 boxes (four-foot x six-foot x eight-foot) jam-packed with wires, switches, and all things “old,” were replaced with what’s called MX1, which is composed of three computer servers that could sit comfortably on a desktop. In an institution where space is at a premium, that alone was a boon.

What all this means is that the Telecommunications Department finished the superhuman conversion of the university’s legacy digital phone system (PBX) to technology-based SIP (Session Interface Protocol) phones. More powerful than the old technology, SIP phones are like little computers. Among other things, your SIP phone allows you to Skype and video-conference.

The next step in the program is recalibrating call center technology, a critical upgrade when it comes to disaster recovery. “With copper phone lines, for example,” says Phalen, “if we lost power the most we could do is close down. However,



Don Trickler, Site Superintendent, Rogan Construction



Jamie Soule, IT Operations Manager

voice-engaged SIP technology-based phones are transportable. Staff members can take their phone, plug in where there’s power, retain their phone number, and carry on business as usual.

Summing up the overall operation, Jaime Soule, manager of IT Operations in IT Communications and Infrastructure Services, says, “This modernization benefits UMass Boston with lower maintenance costs, less hardware, added functionality, and future portability. The majority of the work occurred in the early morning—before business hours. Terry Phalen managed the project, and the conversion was seamless.”

It’s Amazing What **ONE** Can Do!

Xythos Migration to OneDrive

No doubt about it, it’s hard to let go of an old friend—in this case, Xythos, UMass Boston’s proprietary data-sharing platform. A powerful platform, to be sure, Xythos had run its course and had to give way to the new kid on the block—Microsoft OneDrive.

“When teams collaborate on a project, it requires a more complex process than simply putting a document on file share,” says David Gorfine, infrastructure project manager in IT Communication and Infrastructure Services. A solution was required that could provide tracking, versioning, and the ability to restore previous versions of a document with simplicity. The solution should also allow for multiple team members to edit a data file simultaneously.

“But, more importantly,” he says, “if anything happened to that storage solution—if, for example, the storage solution’s company were to go out of business—that data is in jeopardy, as the solution may no longer be supported.”

Understanding that for every challenge there is a solution, IT explored migrating Xythos to Microsoft OneDrive, a similar platform, though more robust and easier to navigate. The plus in this case is that OneDrive is included in a suite of products offered by Microsoft’s Office 365, software already licensed by the university. “Microsoft is among the largest and most reliable data solutions providers in this field, adding security in the knowledge that the platform will be supported for years to come,” says Gorfine.

File sharing is a cinch with OneDrive, but that’s not all. Real-time collaborations, automatic saving of files in the cloud, and the ability to access files from anywhere at any time are only a few advantages of using OneDrive.

David Bonczar, senior information architect in IT Communication and Infrastructure Services, handled the security angle of the migration. “We needed to review the security strength of OneDrive

with the president’s office to ensure OneDrive’s suitability as a replacement for Xythos,” says Bonczar.

The challenge was to make sure that the new solution met UMass Boston’s compliance needs. It was all about safeguards, features, and functionality.

“With OneDrive, data is encrypted at rest and in motion,” says Gorfine, ensuring a very high level of security when users create and/or share documents.

The biggest challenge in executing a project of this complexity, to say nothing of its high visibility, says Gorfine, is getting

buy-in from the community. After all, however you frame it, it’s good-bye to the familiarity of an old friend.

Gorfine praises UMass Boston’s Communications Department for its part in informing the UMass community members of the pending changes and its expertise in promoting the transition. “John Mazarella [manager of training, communications and marketing] and his team were really stellar in getting

messages out and coming up with programs and materials to train people on how to use OneDrive,” says Gorfine. “(Systems administrator) Marla Filoso also helped

the communications team with creating the materials.”

Bhavesh Shah, a database administrator, was the primary technician responsible for assisting and training with client migrations, which were accomplished in phases. “Difficulties could be something as simple as a file name that had reached its character limit and couldn’t be transferred,” says Shah.

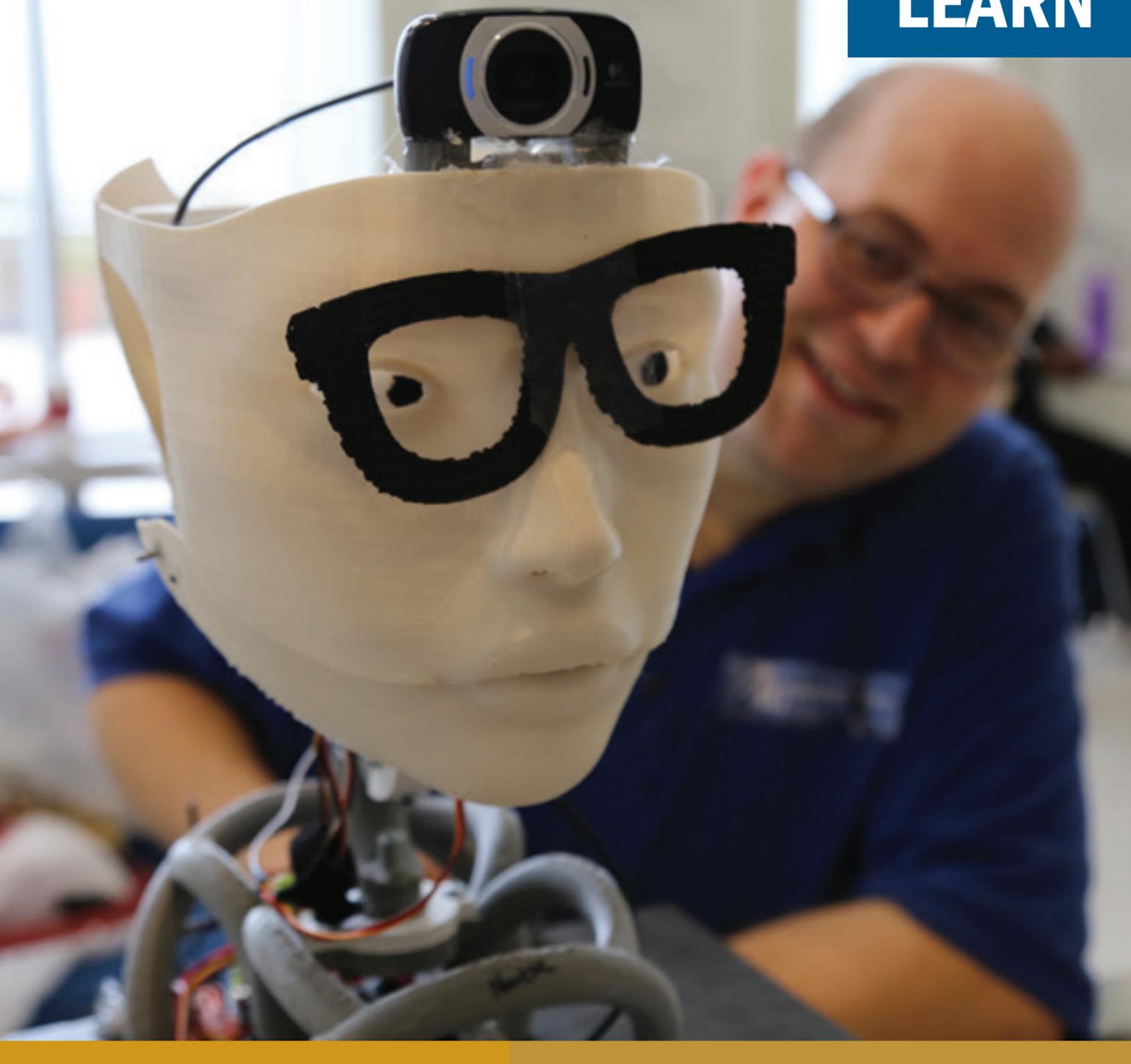
When all was said and done, IT had collaborated with 160 departments university-wide and moved approximately 2,000 individuals from Xythos to OneDrive.



“With OneDrive, data is encrypted at rest and in motion.”

—David Gorfine, infrastructure project manager

Collaborate, Create, and LEARN



The MakerSpace

Aspiring poets, graphic artists, engineers, sculptors, computer scientists, entrepreneurs, environmentalists—it really doesn't matter. The MakerSpace has something for everyone. All that's needed is a little imagination and a willingness to learn new things. Throw in a pinch of patience, and you've got it made. Literally.

Simply said, The MakerSpace is a place where students, faculty, and staff can come together to collaborate, create, and learn. "It's an interdisciplinary, cross-departmental space where students can dabble in robotics, design and print 3D models of human organs, and learn in Virtual Reality environments," says John Mazzarella, manager of training, communications and marketing.

The idea to create The MakerSpace took shape in 2014 when Apurva Mehta, associate CIO, read a couple of articles in *Educause*, a nonprofit association whose mission is "to advance higher education through the use of information technology."

Then, thanks to the efforts of a small grassroots committee whose members became intrigued with the idea of a space devoted to 3D printing and design, UMass Boston launched its own makerspace two years later.

Mehta, Mazzarella, and Filip Cuckov, assistant professor of engineering, were all there at the start. "The first order of business was to determine what kind of equipment we would need," says Mazzarella. We were a little committee asking ourselves 'How can we do this with very little funding.' In addition to guidance from professionals from Brandeis University, which already had a makerspace up and running, the team sought help from their UMass Boston colleagues.

That's when some fruitful collaborations took root. As it happened, the Engineering Department had its own small and sparsely equipped makerspace. Cuckov, however, agreed to move some of his equipment to the soon-to-be-established university makerspace in return for allowing engineering students access to the new facility. "This idea was a win-win," said Cuckov. "The engineering department's makerspace was limited to engineering students by virtue of its size and discipline-specific use. Moving to the larger space would allow more equipment to be added and more students to participate."

Next, enter faculty from the Computer Science Department. Awarded a grant to buy VR equipment, they had nowhere to put it.

The MakerSpace answered the call, and yet another group of students gained access to the lab. Interest was growing by leaps and bounds.

"I've not seen so much excitement among so many people in a while," says Mehta. "It was something quite novel on campus. The time and energy devoted to building the lab was tremendous."

Not surprisingly, this all led to the open-access policy, whereby The MakerSpace was available for use by all students, faculty, and staff free of charge—both for academic and personal projects.

Where to build the lab was a challenge. Helenmary Hotz, director of the School for the Environment's Academic Lab, was next to provide a solution. Supported by her dean, she offered a lounge area in a former GIS lab, located in a building scheduled to be torn down.

"We were living in borrowed space and time, knowing very well that the building was to come down with no guarantee of being assigned space in another location," says Mazzarella. "But our goal was to become so central to student learning that we would gain a vote of confidence from the university and be given a permanent home."

Right on cue, the university acknowledged the lab's success a few short months before the building was to be torn down and, happily, The MakerSpace was given an official new home in McCormack Hall.

The rest is history. The UMass Boston MakerSpace has proved worthy of the move and is utilized by faculty and students on a regular basis. Biochemistry Senior Lecturer Tara Ashok has assigned students the task of 3D printing human organs. Cuckov and students engineered a robotic arm with a promising future in the medical field. Mazzarella engaged Senior Alexander Travis to create hardware and software solutions to automate removing a 3D print job from the printer, increasing efficiencies by allowing several prints to be cued up and printed without human interaction. The MakerSpace has also begun hosting field trips for area high school classes to see the opportunities that will be available to them at a university makerspace.

As anticipated ... the possibilities are proving endless.



**"This idea
was a
win-win."**

—Filip Cuckov

Better Learning Through Voice

VoiceThread

Simply said, VoiceThread is an interactive, multimedia tool that lets faculty and students add voice and video to their presentations and online communications. And the beauty is—it's as simply said as done.

While VoiceThread had been available at UMass Boston for several years, it took off when Ellen Foust, instructional designer in IT Ed Tech and Learning Commons, saw the potential of moving beyond text and marketed the software university-wide. "I love multimedia interactions in an online environment," she says. "They bump up the connections between students and instructor to a whole new level."

Integrated into Blackboard, VoiceThread is the embodiment of the word "collaboration." It opens up all kinds of possibilities: faculty can narrate slide lectures; students can interact with their classmates; faculty can connect with students—all by voice or video. Students can collaborate not just by sharing documents, but also by discussing the topic at hand. A syllabus comes alive; presentations have personality; an online community of teachers and learners blossoms.

Bottom line: VoiceThread helps faculty deliver content in a more captivating way, increasing a faculty member's online presence and helping to build connections with students. "Moving beyond text helps create an experience closer to meeting in person. It helps nurture the virtual learning community and increases student satisfaction and learning," says Foust.

Foust offers the syllabus as an example: "It's one thing for a student to download and read a text document. It's another thing to hear the professor explain it and highlight



significant features." This adds instructor presence in the first week of the semester, so the course starts off on a more personal note.

Ashley Huyge, '19, offers another perspective. "I feel most engaged in online coursework when I'm sharing a small part of a larger project, especially if the class engages in a concept I'm not familiar with, or when I'm looking for confirmation I'm on the right path," says Huyge. "Getting feedback from the professor or other students is very helpful."

Milko Ivanov, senior lecturer in the Department of Exercise and Health Sciences, uses VoiceThread in his hybrid course "Introduction to Nutrition." "I teach this class of 150 students in a lecture hall," says Ivanov, who, through his use of VoiceThread, has devised a unique way to stimulate class participation in the online environment.

"I break students into groups of five and assign different projects to different groups. I then assign a specific role to each of the five students in the group—researcher, writer, producer, and so on."

The students, he says, then work together to complete the assignment,

publishing their results in Blackboard using VoiceThread. Students are instructed to assess each other's presentations and offer comments and critiques. "It's a far more interactive way to learn," says Ivanov.

Tracy Wallach, senior lecturer in the Gender Leadership in Public Policy Program, uses VoiceThread to deliver online lectures.

"I first taught my course 'Leadership and Organizations: Gender, Power and Authority,' in a face-to-face format. VoiceThread enabled me to flip my classroom, meaning I no longer lecture in class," she says. "With a 'flipped classroom,' students listen to my lectures online before class, and class time is spent clarifying, discussing, and answering questions."

"When I first started teaching online in 2014, I had never taught online before," says Wallach. "Ellen was a great teacher. She and the instructional design team have been enormously helpful. I went from knowing nothing about using Blackboard to being able to use it in a sophisticated way. And that's because of Ellen and her team's great training."

IT Briefs

IT Tech Summer Camp Series

In the past, IT offered its tech training courses mainly during fall and spring semesters. When John Mazzarella, manager of training, communication, and marketing, arrived on the scene, he looked at the 2014 numbers—112 registrations for IT-related trainings over that summer. Truth is, he thought, that while faculty and students are not on campus in the summer, staff are. And, perhaps, with the absence of the faculty and students, staff would have more time to give to attending IT trainings.

That said, it seemed worth a shot. Summer 2015, registrations leaped to 720. "Since then," says Mazzarella, "we've run the series every year. We expanded the idea and offer trainings during winter break and a third series every October called 'TechToberFest.'"

StarRez

Two years ago, UMass Boston broke with a 33-year tradition and built two dormitories. And while housing was a welcome addition, it proved to be a challenge in an unexpected way.

The challenge was how to tie students' housing information, critical to the university tracking its residents, with subsequent financial transactions, which, by contract, are handled by a private company.

Fast-forward to StarRez, a software solution identified by Terence Phalen, director of IT Project Management. "We built the front end so the student journey begins with UMass Boston and ends with the private company," says Phalen. This separating of the application and financial processes resulted in the university controlling the application process, while the private company continued to handle the financials.

HERE4U

Here4U

No doubt about it. Frustration levels are high when students can't find the answers to their questions without the rigmarole of a time-consuming search. Well, thanks to an idea put forth by student Chloe Belt during a Vice Chancellor for Student Affairs advisory board meeting, there's now "an app for that."

Here4U is an electronic resource, inspired by municipal 311 systems that provide a single point of entry for a multitude of issues. At UMass Boston, IT developed the app thanks to collaborations with Student Affairs, Enrollment Management, Academic Affairs, Administration and Finance, the Chancellor's Office, and the Office of Diversity, Equity, and Inclusion.

Available 24/7, Here4U organizes information by topic. In the first two months, more than 200 students received assistance with bills, reported facilities concerns, looked up campus events and on-campus employment, received help with academic advising and registration, and more.





View from the front lawn of the Integrated Sciences Complex, taken with UMass Boston's new omnidirectional camera, offering a visual field covering 360 degrees.