

CARNEGIE MELLON UNIVERSITY LIBRARIES

# BOUNDLESS

FRANKENSTEIN ;

OR,

THE MODERN PROMETHEUS.

*By Mrs. Shelley, the daughter of  
Major-General Shelley, R. H. B. Esq.*

IN THREE VOLUMES.

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**Front cover:**

A rare first-edition copy of Mary Shelley’s “Frankenstein; or, The Modern Prometheus,” first published in 1818, resides in the University Libraries Special Collections. Read about the programming to celebrate its 200th anniversary on page 3.

**Back cover:**

A 1962 photo from the University Archives shows winter weather lovers building a snowman in front of the College of Fine Arts.

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Keith G. Webster, *Dean of University Libraries*  
Erika Linke, *Associate Dean*

**Contact the Dean’s Office**  
412.268.2447

**library.cmu.edu**

# Christopher Warren

**Christopher Warren is an Associate Professor of English, co-Director of the English Department's minor in Humanities Analytics (HumAn), and Director of the Bachelor of Arts in English Program. A member of the Dietrich faculty since 2010, he recently wrapped up the digital humanities project, "Six Degrees of Francis Bacon," which re-creates the British early modern social network to trace the personal relationships among figures like Bacon, Shakespeare, Isaac Newton and many others.**

*For readers who aren't familiar with it, describe "Six Degrees of Francis Bacon."*

Founded in 2011 by Daniel Shore and myself, "Six Degrees of Francis Bacon" is an online reconstruction of the early modern social network that scholars and students from all over the world can collaboratively expand, revise, and curate. Unlike published prose, "Six Degrees" is extensible, collaborative, and interoperable: extensible in that people and associations can always be added, modified, developed, or removed; collaborative in that it synthesizes the work of many scholars; and interoperable in that new work on the network is put into immediate relation to previously studied relationships.

*You collaborated on that project with some of our Libraries faculty. Can you describe how you worked together?*

We'd been working on the machine learning part of "Six Degrees" for a couple years when we brought in Jessica Otis as a CLIR Postdoctoral Fellow to spearhead data curation. Through Jessica's expertise and dedication, we created a much more systematic

approach to handling and preserving data. After her two-year fellowship ended, Jessica was hired by the Libraries as its Digital Humanities specialist and she and I have continued to work closely. We've also worked closely with Scott Weingart, an expert in network analysis for digital humanities who joined the Libraries in 2017. Scott regularly brings his knowledge about networks and DH infrastructure to the project.

*On November 17, you held the "Re-Designing Bacon" add-a-thon in Hunt Library, inviting the public to explore a redesigned SixDegreesofFrancisBacon.com. How did it go?*

The purpose of Re-Designing Bacon was to introduce the results of the recent overhaul of the website and, frankly, to put the new site through its paces before we really tightened the screws and open-sourced the code. The event was a great success, during which we learned a ton of lessons about the site's usability and added hundreds of new relationships.

*What's next for the "Six Degrees" project?*

"Six Degrees" will, I hope, continue to be the broadest, most-accessible source of who knew whom in early modern Britain and continue to support both qualitative and quantitative studies of early modern networks. The University Libraries is a big reason why. We tend not to think very much about "end of life" issues for digital projects, but what happens to these new kinds of endeavors once underlying technologies become obsolete? To its great credit, the Libraries has committed to hosting and maintaining the dynamic web application for the foreseeable future. Scholars will thus be able to continue to refine the network by contributing to the website. Versioned datasets will be archived periodically at the Folger Shakespeare Library as well.

This interview has been edited for publication. Read the rest at <https://tinyurl.com/6-degrees-cmu>

# Frankenstein



## “Frankenstein”’s 200th Anniversary

Mary Shelley’s novel “Frankenstein; or, The Modern Prometheus” was first published two hundred years ago in 1818. Shelley’s novel warns of the possible sacrifices for knowledge and hints toward the costs to man and society, how new knowledge can redefine human existence and experience.

These themes of Frankenstein have been reinterpreted and applied to debates regarding atomic weapons, nuclear energy, cloning, bioengineering, robotics, and artificial intelligence (AI). The “Frankenstein 200: Perils and Potential” panel hosted by Digital Scholarship Strategist Rikk Mulligan inspired the first original single from the ETC Press, “Frankenstein’s Legacy: Four Conversations about Artificial Intelligence, Machine Learning, and the Modern World.” The publication brings together CMU scholars in the Arts, Humanities, and Sciences to consider the relevance of Shelley’s novel today, particularly how it helps frame the responsibility of investigators to consider the consequences of artificial intelligence and a technologically-augmented human society.

Each of the panel participants — Jeffrey Bigham, David Danks, Barry Luokkala, and Molly Wright Steenson — sat down with ETC Editor Brad King for wide-ranging discussions about artificial intelligence, machine learning, and the impact of these technologies on the world in which we live. Those conversations were edited into an open source publication available for download or purchase at <http://press.etc.cmu.edu/index.php/product/frankensteins-legacy>

The book is part of the ETC Press “In Conversation With” series, a conversational examination and explanation of some of the most powerful technological tools in our society.

## University Libraries celebrates the anniversary of Mary Shelley's influential novel with series of events exploring its key themes.

Carnegie Mellon University faculty and students are exploring the influence of technology on modern life through a 200-year-old lens: Mary Shelley's "Frankenstein." Shelley's novel, which explores the drive to create and the ethics of responsibility, provides a current metaphor for examining the fast-paced development of artificial intelligence.

To celebrate the 200-year anniversary of "Frankenstein," University Libraries, which houses a rare first-edition copy of the novel, created "Frankenstein 200: Perils and Potential," a series of events addressing the innovative possibilities and the hazards of technology. A student film competition ran in the fall and a special exhibit – featuring the first-edition copy – curated by Posner Center Interns will be on display beginning late May 2018 through the summer.

"Where does all this innovation lead? It's not about accidentally slipping up and having commercially driven science create a genetically modified dinosaur. It's how we change our habits, how automated bots on the web alter us, alter our voting, and alter our perception of each other," said Rikk Mulligan, digital scholarship strategist. "It's programmed by humans for now, but there's the possibility of artificial intelligence growing so sophisticated it could stretch itself into designs we can't even comprehend anymore."

Other scholars agree that it is not the typical science fiction model of a robot-turned-evil that catches their attention. Jeffrey Bigham, an associate professor of human-computer interaction in the School of Computer Science, recently was exposed to software bias while working with colleagues to make a system that could label images on social media so people who have visual impairments could know the images' content. Along the way, researchers found unexpected errors.

"One example was a picture of Hillary Clinton at a rally and the description that the algorithm made was that it was 'a man doing a trick on a skateboard,'" Bigham said.

The error ended up being simpler than they thought — the creators of the system were skateboarding fans, and skateboards appeared frequently in their initial data. It biased the system toward sports, and it saw things that were not there.

A skateboard-level mistake may seem harmless, but the implications are dangerous, Bigham said. Bias can easily move from sports to gender or race. A recent case of biased software predicted the rate that someone would be rearrested in Wisconsin, and race turned out to be a very significant factor. It leads to a question: Should algorithms represent the world as it is or the world as it should be?

"Descriptively, it was probably right. If you are African-American in the United States you are more likely to be rearrested than if you are white. But we might also plausibly think that is due to structural racism," said David Danks, head of the Department of Philosophy in the Dietrich College of Humanities and Social Sciences.

Mulligan, Danks and Bigham participated in a panel discussion titled "Creation and Consequence" and were joined by Barry Luokkala, a physics professor in the Mellon College of Science, and Molly Steenson, a professor of design in the College of Fine Arts. They discussed their roles as academics studying technological developments, as well as opportunities to influence how artificial intelligence is developed ethically.

"It's often done working with companies directly," said Danks. "Working with the educational systems to teach the next generation of designers and the next generation of technologists to be aware of the human dimension. It means going out to policymakers and making sure they understand."



# Anderson Recalls History of Horror

**A fall exhibit on alumnus George Romero featured contributions from the former School of Drama professor who designed costumes for his films.**

Carnegie Mellon University's Barbara Anderson designed costumes in six George Romero films, but one moment stands out.

During the filming of the anthology movie "Creepshow," Anderson, a School of Drama professor emeritus, stood in a men's bathroom covering an actor with an alien green grass while being surrounded by scurrying cockroaches. The actor and film's author was Stephen King.

"I was shaving his chest to make paths to glue on the green stuff," Anderson said. "It was such a surreal time."

The anecdote is one of many captured by Assistant Archivist Kate Barbera in a wide-ranging interview for the University Archives' Oral History Program. During the interview, Anderson discusses her more than 40 years of service to the School of Drama and recounts her experiences working with Romero, the father of the zombie film genre. Romero, a CMU alumnus who attended classes in the 1960s and received his degree in 1983, died on July 16. He received a Walk of Fame star posthumously on Oct. 25 in Hollywood.

The audio recording was shared on the University Libraries blogs as the final installment in a series of posts that ran in the fall, titled "Legacy of the Dead." It accompanied an exhibit in the Hunt Library lobby, featuring selected items from Anderson's collection.

Among the items on display was a photo of Romero, King, and Anderson's late husband, Cletus, a former CMU design professor and production designer on many Romero films. Viewers could also see the poster for "Creepshow," a film that has a special connection to CMU. In addition to featuring the work of the Andersons, the film starred alumnus Ted Danson, included the special effects work of alumnus Tom Savini and was partially filmed in Margaret Morrison Carnegie Hall.

"Until the day he died, Romero was a lover of cinema whose stories and imagery were sometimes at odds with the status quo, but through creative innovation and a strong sense of individuality, he was able to create something special," said Andrew Prisbylla, library associate for Ordering, who coordinated the blogs and exhibit. "With 'Legacy of the Dead' we hope the CMU community appreciated Romero's unique voice and the wealth of creativity his collaborators Cletus and Barbara Anderson brought to campus."

# Introducing Blogs!

**On the new University Libraries blogs, specialists post what's current or noteworthy in their subject areas, providing readers with an expert's view of library services and collections.**

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The new University Libraries blogs, which launched last fall, arose out of a desire to create a digital venue for the on-staff experts to explore their topics of interest. Unlike the News section of the website, which offers timely updates of events and services, the blogs are a space in which Libraries' faculty and staff can share their takes on the topics about which they are most passionate.

The blogs are organized into blog channels, each of which acts like a television channel in that it presents curated content around a specific theme. Read on for a description of each of the blog channels and visit

<https://www.library.cmu.edu/blog> for new posts.

**Back in the Stacks** – Sure, you've heard of the current bestsellers, but what about books from previous years that you never had a chance

to read? Rediscover some great titles you may have missed.

**dSHARP** – The dSHARP center, co-sponsored by the University Libraries and the Dietrich College of Humanities and Social Sciences, promotes innovative digital research by connecting scholars to collaborators and resources; researching original questions relevant to the arts, humanities, and sciences; and educating the community about digital tools and research methods

**New Ebla** – University Libraries' take on the past and future of libraries, with an emphasis on emerging technologies and roles.

**Scotty Tales** – Exploring unusual finds from the University Archives.

**The Information Environment** - The people, collections, and services that support the University Libraries' mission to build, steward, and enhance the information environment of CMU.

**The Intrepid Researcher** – Research librarians give you the latest on the most effective resources, tips, and tools to optimize your work at every step of the research process.



## Insight

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*“Isn’t it all on the internet now?”*

An acquaintance recently posed this question to me in the midst of a discussion about whether we still need libraries. Contrary to their expectations, I was able to assure them that the role of libraries in supporting teaching and learning has never been more important. Universities everywhere are placing emphasis on the student experience and the quality of the learning environment, and libraries, remain absolutely at the heart of student life.

Carnegie Mellon’s focus on the student experience has brought many improvements to our campus, including the splendid remodeling of the Roger Sorrells Engineering & Science Library in early 2017. Students have responded enthusiastically to an environment that provides an array of spaces and technologies that support their needs. Around half a million students visited that library last year, and many have praised the quality of the renovations. We were delighted to see the Sorrells Library project recognized in Library Journal’s Year in Architecture 2017 as a “Learning Space Transformed.”

Over the course of a semester, students are required to work on collaborative projects, develop team presentations, write papers, and study for finals. For each stage of this academic journey, they want the library to provide enough space and the right facilities to support their success. For many, the library is their office or laboratory, and they expect the comfort, services, and functionality of any modern work environment. As we learn more about our students, their needs, and behaviors, we must create more spaces, and library services and products, that add value, and truly enhance the CMU experience.

Carnegie Mellon is a dynamic and vibrant university, and we’re excited by the opportunity to work with our remarkable students to develop libraries that truly meet their needs. This inspiring journey involves a number of partnerships, with our students and faculty, with the leaders of the CMU Experience initiative, and with the support and advice of the many supporters and donors who help us add an edge of excellence to all that we do.

Keith G. Webster  
*Dean of University Libraries*





# Libraries Welcomes CLIR Fellows

**Two CLIR Fellows will serve two-year terms working on research data management and data visualization.**

The CLIR (Council on Library and Information Resources) Postdoctoral Fellowship Program offers recent Ph.D. graduates the chance to develop research tools, resources, and services while exploring new career opportunities. Fellows serve a two-year term, during which they work on projects that forge and strengthen connections among library collections, educational technologies, and current research.

Participation in the CLIR Fellowship Program is new for Carnegie Mellon, which hosted its first two Fellows between 2014 – 2016, both of whom went on to accept full-time positions in the Libraries. Before this, the Libraries had hosted two Fulbright Scholars and a James Cook Scholarship winner for one to two semesters who sought to learn more about the Libraries. With these latest two CLIR Fellows, the Libraries continues its tradition of welcoming outside researchers. Learn more about them.

**Emma Slayton** joined the University Libraries on November 1, 2017 as the CLIR Fellow for Data Visualization and Curation in November. She recently finished work on her PhD in archaeology at Leiden University in the Netherlands. As an archaeologist, Emma focused on using computer modeling to hypothesize the location of early canoe routes in the Caribbean. She also has experience working with GIS and other data visualization tools. At the University Libraries, she plans to offer workshops and other content to promote the use of various data visualization methods, tools, and techniques.

**Eric Kaltman** joined the University Libraries on September 1st, 2017 as a CLIR Postdoctoral Fellow in Data Curation for the Sciences. Eric earned his PhD in Computer Science from the University of California, Santa Cruz with dissertation research into the historical preservation of software development along with tools for software discovery, visualization and emulation. He also holds a Masters in Asian Studies (Chinese) from UC Berkeley, and a Bachelors in History from the University of Michigan. Eric is helping with research data management policy and liaison relations with the School of Computer Science.



# Concert in a Cave

**Carnegie Mellon University students have taken music and art to a new place — hundreds of feet below the earth's surface.**

Students and faculty from CMU's College of Fine Arts, School of Computer Science, the BXA Intercollege Degree Programs and Integrative Design, Arts and Technology (IDeATe) Network put on a one-hour festival December 21, 2017 in a limestone mine in Brady's Bend, Armstrong County. The 50 million square foot space, which primarily serves as an underground storage facility for boats, cars, and documents, was made available for the project by Daniel Bruce, owner of Brady's Bend Corporation and 1998 graduate of the Tepper School of Business.

"SubSurface: Site-Specific Sight & Sound" appears to be the first arts festival in the region to be held in an underground limestone mine, according to Rich Pell, associate professor in CMU's School of Art and co-organizer of the event.

After buses took them deep within the mine, about 130 attendees explored a quarter-mile path transformed by swirling light projections, electronic music performances and art installations, including corn stalks, a person

wearing a donkey mask in the restful pose of a TV-watching retiree, and a clothesline strung with forgotten socks.

The journey concluded with a concert in a long, cavernous room. The performance began as an instrumental set and gradually transitioned to electronic music, with purple and teal computer-controlled lighting that visualized sound moving through the room.

Jesse Stiles, co-organizer and an assistant professor at CMU's School of Music and IDeATe, said students took advantage of the mine's gigantic spaces and acoustics that amplify lower frequencies to play with music and art on a different scale than a typical venue.

Stiles said the project benefited from interdisciplinary collaborations between students with strengths in the arts and technology, including world-class performers from the School of Music, programmers from the School of Computer Science, and video designers, sculptors and performance artists from the School of Art.

"These are combinations of skill areas that are really unique to CMU where we have so many different areas of study that are so strong," Stiles said.



# Sorrells Library – One Year Later

**On the anniversary of its renovation, students weigh in on the changes to Sorrells Library.**

On January 17, 2016, the Roger Sorrells Engineering & Science Library re-opened following a complete renovation over winter break. The updates, which were completed in four weeks, increased study spaces by 25% and added new group and project rooms. In addition to improving the student experience, the impact of the renovation was felt well beyond the walls of Wean Hall – such as in Library Journal, where it was recently featured in the “Learning Spaces Transformed | Year in Architecture 2017” column. One year later, three student workers who have worked in the library both before and after the renovation, share their thoughts.

*Since the renovation of Sorrells Library, what’s the biggest change you’ve noticed?*

The biggest change I have noticed from the library renovations is the efficient use of the space. There has been an increase in the number of desks and collaborative areas, which allows for a larger number of people to be present in the library.

– Mario Engmann, senior mechanical engineering major

People take advantage of the new fixtures, and seem more comfortable in the library space. There’s a lot more collaborative work going on in the library.

– Youjin Nam, senior design major

*What have other students said to you about the renovation?*

Although people still say they would like more space at the library, people have said they appreciate having more study rooms and the library feeling more modern. They often say it feel ‘less grimy and more bright’.

– Youjin Nam

*Is the library more crowded since the renovation?*

More crowded. Some students have asked us when the library is less busy, since it was so packed and no seats available.

– Bridget Njeri, junior neurobiology major

It has been more crowded since renovation, naturally because there are more seats due to clearing out some of the books. I think it’s also more crowded now that there are a lot of study rooms so people hold their group meetings here.

– Youjin Nam

*How does the design of the library impact the student experience of working and studying in it?*

The renovations have definitely helped to improve the experience of users in the library, with a more comfortable space that allows them to work more effectively.

– Mario Engmann

At first the carpet was a bit unsettling due to the color but now it fits in nicely. The study rooms and cubicles are especially popular and promote collaborations among students.

– Bridget Njeri

**Carnegie Mellon University**  
Libraries

Office of the Dean  
5000 Forbes Avenue  
Pittsburgh, PA 15213

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