19 / 20 ANNUAL REPORT

Library and Technology Services
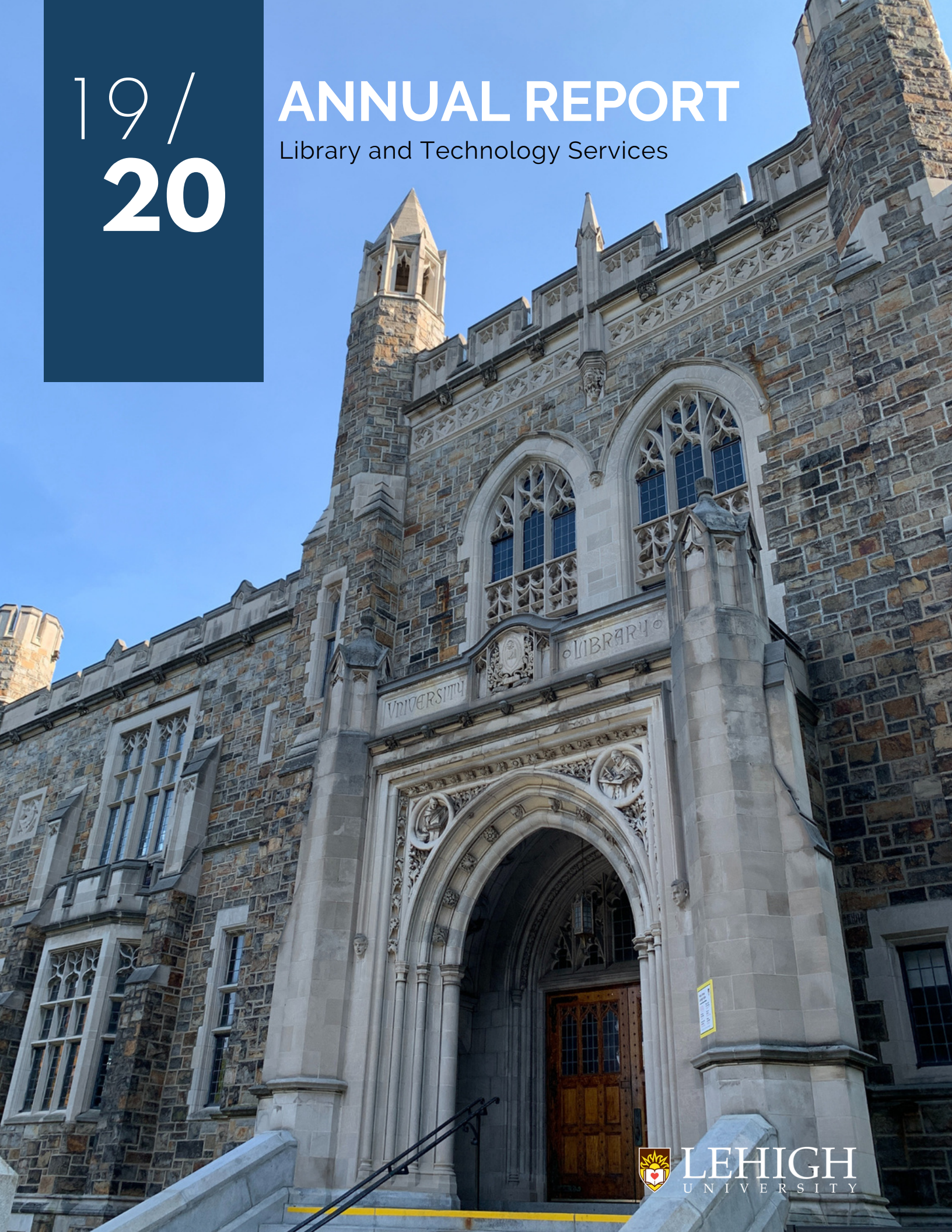
LEHIGH UNIVERSITY

ANNUAL REPORT

In this report, we review our accomplishments from the past academic year, with a focus on teaching, learning, and working in the age of COVID-19, and how we worked together to educate students, conduct research, produce and disseminate scholarship, and conduct the business of the university.

Welcome

Today we release our first-ever Annual Report and look back on an academic year like no other. It reflects on our accomplishments throughout the year, as well as the many changes we have made since the COVID-19 pandemic began —from the pivot to online teaching and learning, to ramping up virtual technology and library resources to meet the new and urgent needs of the university—all while staying true to our core mission.

AY 2019-2020 was a normal year. Until it wasn't.

On March 9th, as the university was preparing for the possibility that we might need to close campus and shift to remote learning, I wrote to the LTS community. Here is part of what I said:

We in LTS play a special role here at Lehigh. For, while we will be impacted personally and professionally (if Lehigh's campus closes), we are also Lehigh's experts when it comes to the use of technology to conduct the academic and administrative functions of the university. As such, we have a special responsibility to keep our systems running and to do all we can to support the many faculty, students, families, and staff members who rely on us. With that in mind, I want to thank you for the work you are already doing—and thank you in advance for the important work you will be asked to do in the days ahead.

Several days later, Lehigh announced that all instruction and work would be remote for the remainder of the semester. It was a hard day when we closed Linderman and Fairchild Martindale Libraries. I wrote to the campus community, saying, among other things that

All libraries aspire to be open, safe, supportive, inspiring sites for the university community to study, conduct academic research, receive expert guidance, and engage socially with colleagues. We in LTS take great pride in creating those spaces for all of you. But in light of ever-stronger recommendations from federal, state, local, and Lehigh health authorities regarding the importance of maintaining social distance wherever possible, I'm confident that closing the library is the right decision. Despite these changes, we are still here to help.

In the following pages, I offer a report on how we in Library and Technology Services were still there to help.

You'll find stories of how we partnered with faculty, students, and staff across campus during the rapid transition to remote learning in spring 2020; how we helped maintain academic and business continuity throughout spring and summer; and how we helped Lehigh reopen and prepare for fall 2020.

Some LTS staff were among those who continued to come into campus even during the campus shutdown. In August, as we reopened our physical libraries, more of us came to campus to prepare study spaces, to upgrade classroom technology, and to provide in-person support for our on-campus students.

But most of us, like many of you, continue to work remotely and will continue to do so through fall and into spring.

This is all to say that, even during this pandemic, whether on campus or remote, we have remained true to our mission: to provide leadership, expertise, and support to Lehigh's faculty, students, and staff as we work together to educate students, conduct research, produce and disseminate scholarship, and conduct the business of the university. In short, we aspire to help all Lehigh faculty, students, and staff be at their best.

Thank you in advance for reading. I hope you will get a good overview of the kind of work we do.

If you find an example of the wonderful things Lehigh faculty, students, and staff do with our help and you are inspired to partner with us, reach out to me or any one of us and we'll figure out how we can help.

GREG REIHMAN, PH.D.
VICE PROVOST, LIBRARY AND
TECHNOLOGY SERVICES
DIRECTOR, CENTER FOR INNOVATION IN
TEACHING AND LEARNING

01

FOSTERING INNOVATION AND EXCELLENCE IN TEACHING AND LEARNING

Leading the way during Lehigh's rapid transition to remote learning

When Lehigh announced in early March that the remainder of the spring semester 2020 would be fully remote, our Center for Innovation in Teaching and Learning (CITL) had already prepared an Academic Continuity Guide with specific steps faculty could take to move their courses online rapidly; we already had a campus-wide Zoom license in place; our recently upgraded Course Site system was ready for the increased demand; and we were well prepared to offer remote access to software and library materials.

Over 300 faculty and graduate student instructors attended course development workshops offered by our Instructional Technology team, and we followed up with individual consultations and additional workshops throughout the spring semester.

In addition, LTS

- Distributed Internet hotspots and computers to students in need.
- Purchased and distributed additional document cameras, microphones, and other technology to support remote lecture creation.
- Met increased internet demand by enhancing connectivity to campus.
- Streamlined remote access to scholarly materials, software, and key Lehigh applications.
- Offered easy curbside pickup of library materials and technology equipment.

> ## "From talking to colleagues around the country (and the globe) who are heading online shortly, it is clear that Lehigh is ahead of the game in terms of resources made available to faculty for this transition.
>
> **CORINNE POST**
> Chair, Department of Management
> March, 2020

- Extended remote hours for librarian consultation.
- Increased Zoom recording storage, software licensing, and access to LUapps and Virtual Computer Labs.
- Expanded on-site and virtual Help Desk hours and prepared staff to respond to a newly-expanded range of support requests.
- Transitioned our TRAC Writing Fellows program to continue its work supporting 24 courses and over 1,000 students.
- Created a "Remote Learning and Academic Integrity" guide, and consulted on adjusting assignments and assessments for remote learning.

Preparing for Fall 2020

In partnership with a Faculty Senate Working Group, our Vice Provost and CITL staff reviewed the highs and lows from spring 2020 and then developed a plan to further prepare Lehigh faculty and graduate student instructors for fall 2020.

In coordination with College Deans' offices, we offered 35 workshops for Lehigh faculty and graduate students, highlighting lessons learned from spring 2020, recommending best practices, answering questions, and spotlighting faculty successes. Over 500 faculty and teaching assistants attended; many more accessed workshop recordings and our numerous online resources.

In addition, we acquired new digital materials to support online learning and remote research:

- JoVE and Labster, multimedia-rich science instruction platforms
- O'Reilly for Higher Education, a service of online books and video in support of data science, technology, and business
- The Washington Post, supplementing our campus-wide subscriptions to the New York Times and Wall Street Journal
- Two hundred fifteen new titles in OverDrive, an ebook and audiobook platform
- New software such as Respondus, Adobe Creative Cloud, Slack Enterprise Grid
- LinkedIn Learning, a professional development platform that offers over 10,000 expert-led, online courses and video tutorials
- Interdisciplinary ebook and streaming video packages

300+
instructors attended 19 Spring 2020 Academic Continuity workshops

500+
instructors attended at least one of 35 Preparing for Fall 2020 workshops

91

unique software titles available on LUapps, virtual computing software that can be accessed anywhere, any time, on any device

612K

ebooks available to students, faculty, and staff, constituting 60% of our total print collection

100%

faculty and staff using Duo Two-factor Authentication to secure their accounts and Lehigh data

2,400+

Course Sites in our Learning Management System

Dr. Michael Kramp, Professor of English and Co-Director of the Humanities Lab, teaches in-person and remote students simultaneously in Maginnes Hall 101, one of several locations outfitted for HyFlex teaching.

We partnered with faculty on over 100 courses to prepare them for teaching in a hybrid environment, where they teach simultaneously to remote and in-classroom students.

BUILDING ON A LONG TRADITION The Office of Distance Education continued its work supporting remote learning, helping colleges offer 33 graduate DE courses, sharing expertise with others on campus, and offering expanded help to newly remote undergraduates in the College of Arts and Sciences, the College of Business, and the P.C. Rossin College of Engineering and Applied Science.

22

Classrooms upgraded with videoconferencing technology, bringing our total to 40

75

Faculty requests met for equipment needed for enhanced remote instruction

REMEMBER 2019?

Although fall 2019 may feel a world away right now, LTS was collaborating with faculty on some of Lehigh's most innovative and engaging courses. We partnered with eight CITL Faculty Fellows and faculty on rethinking instructional approaches and assignments used in courses.

Hugo Ceron-Anaya
Introduction to Sociology

Michael Kramp
Film and Cultural Theory

Ginny McSwain
Introduction to Astronomy Lab

Michelle Washington
Organizational Behavior

Julia Maserjian
Community Study through Documentary Film

Joan Ramage
Following the Drinking Gourd

Ziad Munson
Keep the Change: Social Movements

William Crow
Ancient to Medieval Art and Architecture

- We collaborated with Bacy Dong, Steve Savino, and Robert Kuchta, recipients of the College of Business Teaching Innovation Grant.
- We offered 6 workshops for 45 graduate students in our Teacher Development Program and 8 workshops for 25 P.C. Rossin Graduate Student Teaching Fellows.
- Ninety two undergraduate TRAC Writing Fellows supported 27 instructors and provided technology research and communication support to approximately 2,200 students.

729
hours of video and audio production

134
classes hosted in the Digital Media Studio (DMS)

225
DMS lab hours and instruction time

1,416
pieces of equipment loaned (cameras, microphones, conference kits, etc.)

TRAC Fellows (l-r) Justin Choi '22, Beyza Akinci '22, Simona Shur '22, Yifan Zhang '22, Fall 2019.

SPOTLIGHT ON CUTTING-EDGE COURSES

The Doing and Undoing of Racism
Psych 326/AS 326

In this course, taught by Valerie Taylor, students first identified why and how racism occurs and is maintained, and then analyzed various social-psychological interventions that have been designed to reduce racism, specifically. Students were tasked with designing a cartoon strip that details a particular psychological, social-psychological, historical, and/or legal process that has contributed to racism today. Digital Scholarship Team (DST) staff vetted tools and assisted in assignment design.

Business Communications
Bus 003

An advanced TRAC fellow was assigned to work over the summer with the new Director of the Rauch Center for Business Communications to help design and launch a new first-year course. In the fall 2019 and spring 2020 semesters, TRAC fellows supported a team of BUS 003 instructors and supplied peer-tutoring in written and oral communication for approximately 420 students.

Multimedia Storytelling
Jour 230

Jeremy Littau and Matt Veto. This course was an introduction to storytelling across multimedia styles such as video, audio, photography, social media, and the written word. Students received instruction from DST staff on protocols and flight for Unmanned Aircraft Systems (drones) and accompanied students on flights, which were incorporated into their video projects.

Center for Career and Professional Development (CCPD)

TRAC Fellows worked for the first time with pre-professional students on personal statements for their medical, dental, and law school applications. CCPD Assistant Director Mary Ellen Raposa offered this assessment of the fellows' work: "I was very impressed by the personal statements that the students submitted this summer in the cycle. They were polished to perfection, had a great flow, and just in general were of a higher quality than I often see."

Our librarians offered a robust curricular instruction program, serving students through integration into various co-curricular programs.

During the fall semester, first-year students were introduced to scholarly, historical, and digital archive materials through a wide variety of **5x10 orientation programs** facilitated by librarians. Sessions included an Escape Room activity based on library resources, an exploration of how 16th and 17th century rare books and maps depicted new scientific and geographic discoveries, and a Special Collections open house that gave over 200 first-year students the opportunity to engage and interact with artifacts spanning several millennia.

Librarians in total taught 126 classes, which encompassed approximately 1,250 students. Library instruction included teaching:

- Undergraduate Psychology students to analyze the differences between magazine and newspaper depictions of scientific research in comparison to scholarly research
- First-year students how to use primary sources such as maps to understand the experience of escaping enslavement on the Underground Railroad in an Earth and Environmental Science course
- Sociology students to investigate the role that information production and dissemination plays in the formation of conspiracy theories
- Biology students to create an open access textbook on introductory neuroscience
- Art History students giving gallery talks how to research artists and art works

Alex Japha, Digital Archivist
Lehigh Libraries Special Collections
First-year student Transcribathon 5x10, 2019
Linderman Library

*Scholarly Communications/Social Sciences Librarian **Carrie Baldwin-SoRelle** (l) and Assistant Director of Instruction and Outreach & Education Librarian **Jasmine Woodson** (r) present "Who Knows What?: Understanding Undergraduate Learning through Library Assessment" at the Student Affairs Assessment Symposium on January 9, 2020.*

CITL partnered with the **Office of Diversity, Inclusion and Equity** to offer a two-day Inclusive Excellence in Teaching and Learning workshop for faculty and teaching assistants.

Our TRAC Writing Fellows offered peer-to-peer support to students in the **Center for Career & Professional Development** (CCPD) pre-professional program, and we partnered with CCPD to create six dual-purpose rooms in the Fairchild-Martindale Library that serve as study rooms and job interview rooms.

CITL partnered with the **Office of Graduate Life** to offer a 12-session Teacher Development Program for Graduate Students for 35 graduate students, and offered a two-day Intensive Teaching Workshop for 35 **Rossin Doctoral Teaching Fellows in RCEAS**.

Over half of first-year students and one third of graduate students completed the **LTS Ramp Up online summer orientation**. Hosted on our Course Site learning management system, Ramp Up features interactive video, software downloads, and more to help orient new students to our services before they arrive on campus.

A blue-ribbon panel of veteran undergraduate researchers offered insight, advice, and opportunities to over 40 first-year students in the **Undergrads Do Research** 5x10, co-sponsored by LTS.

Our Librarians sponsored several **Graduate Breakfasts** in Packer House, providing space and time for graduate students to meet and socialize with librarians.

CITL partnered with the **Creative Inquiry Program** to offer course redesign workshops for eight **Creative Inquiry Faculty Fellows**, and with the Office of International Affairs for eight **Global Teaching and Learning Fellows**.

31
courses supported for projects using Digital Media, Augmented Reality, Virtual Reality, & Unmanned Aircraft System (drone) flights
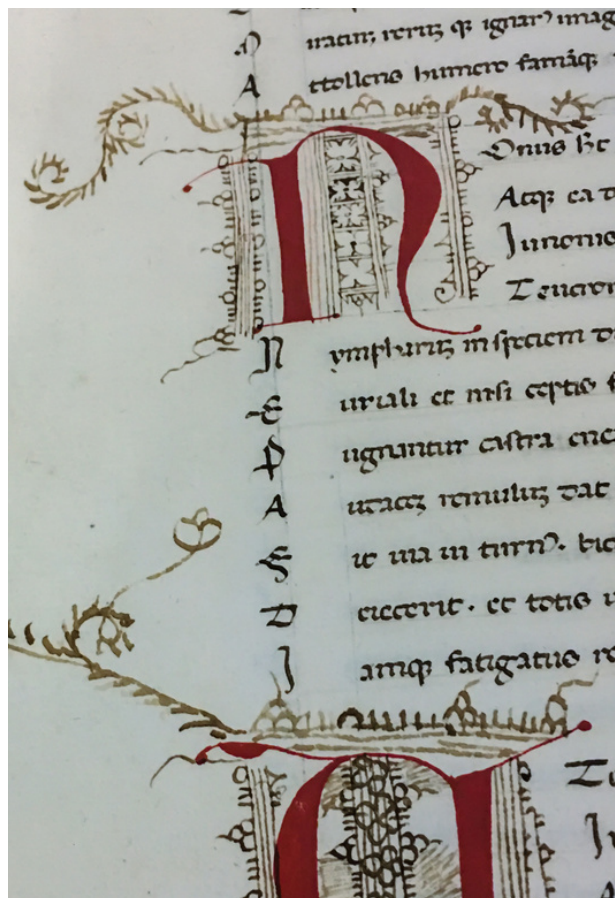
164
event recordings coordinated by Digital Media Studio staff

02

ADVANCING RESEARCH AND SCHOLARSHIP

LTS advances Lehigh research by providing scholarly materials and research computing resources, by offering research consultations with students and faculty, by partnering on grants and research projects, and by incentivizing and recognizing excellence in research.

INNOVATING IN THE LIBRARIES

Lehigh was one of the first academic libraries in the world to **fully migrate to the open source Library Services Platform FOLIO**, which will allow us to enhance digital and physical lending, collections acquisitions and analytics, data and machine learning decision making, and further collaboration at the local, consortia, and global level.

LEHIGH UNDERGRADUATES REBECCA LUTTINEN and BROOKE SCHAEFFER shared the Libraries Student Research Prize for 2020. Sponsored by Library and Technology Services (LTS) and the Friends of the Lehigh Libraries, the Prize recognizes excellence in undergraduate scholarship and the use of library and research resources.

2019 SAW THE MONUMENTAL COLLABORATIVE GRANT-FUNDED PROJECT Bibliotheca Philadelphiensis, known as **BiblioPhilly**, come to a close, though the value of the content and attention paid by the media, scholars, and beyond continues to grow. Led by Lehigh University Special Collections, a partnership of 15 Philadelphia-area libraries, including the University of Pennsylvania and the Free Library of Philadelphia, has scanned and digitized more than 160,000 pages of European medieval and early modern codices with extensive metadata, making them publicly accessible to students, scholars, and researchers throughout the world, with use in myriad disciplines already in evidence.


The Libraries Technical Services Department helped make public **Lehigh University Art Galleries'** collection of 2,011 books about art and artists, exposing their published content as well as treasures such as inscriptions from the authors and artists, often with handwritten personal messages and dedications.

Lehigh's **Visualization Lab** is a collaborative space that can effortlessly shift from the examination of visual data on a vast pixel canvas to the evaluation of the pedagogical value of virtual reality environments. The Lab features several innovative visualization tools, including a MultiTaction Curved iWall for the collaborative investigation of digital information at large scale. In addition, the Lab is outfitted with an HTC VIVE system, which provides users with an immersive virtual reality experience.
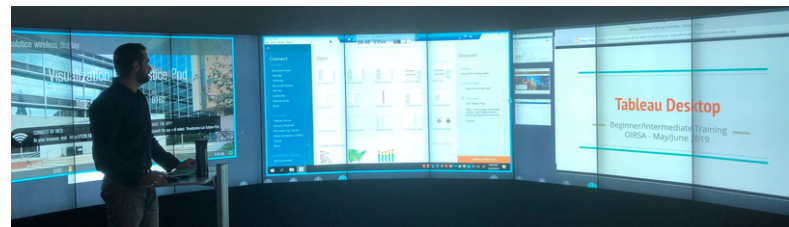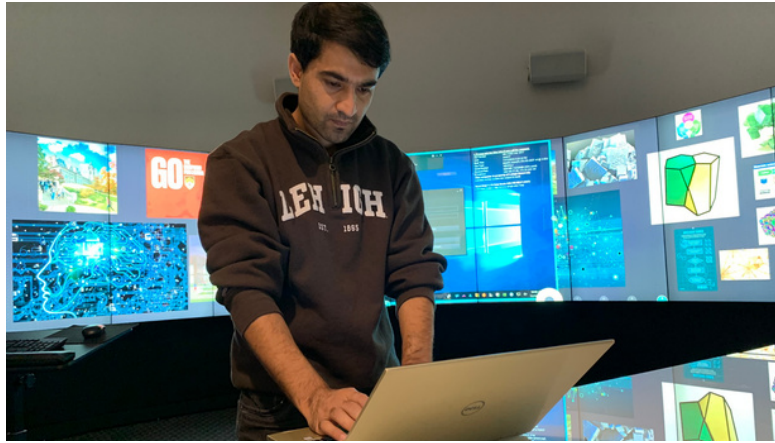
The CITL and NET teams worked to support the technology and resources required by the **Nano Human Interface** initiative, led by its director, Dr. Martin Harmer. The mission of the NHI initiative is to develop a new artificial intelligence support system necessary to achieve the goal of visualizing and interacting with complex, multidimensional sets of data. Currently, this is taking place in campus labs but will soon expand remotely across universities.
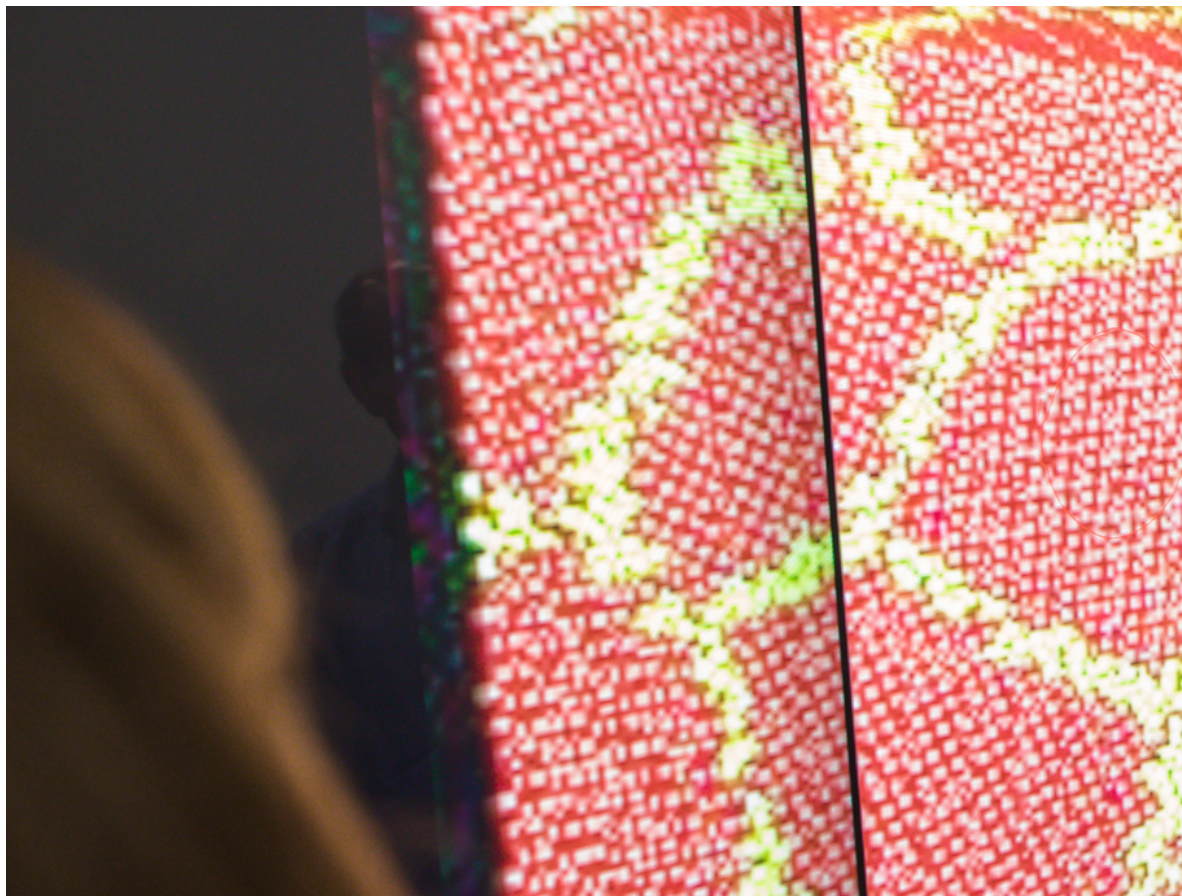
CITL NAMED ASSISTANT PROFESSOR VALERIE TAYLOR (PSYCHOLOGY, AFRICANA STUDIES) ITS 2020/21 DIGITAL SCHOLARSHIP FACULTY FELLOW As a Fellow, Professor Taylor is further developing her research interests in how virtual reality (VR) can be leveraged to encourage empathic engagement in challenging interracial interactions.
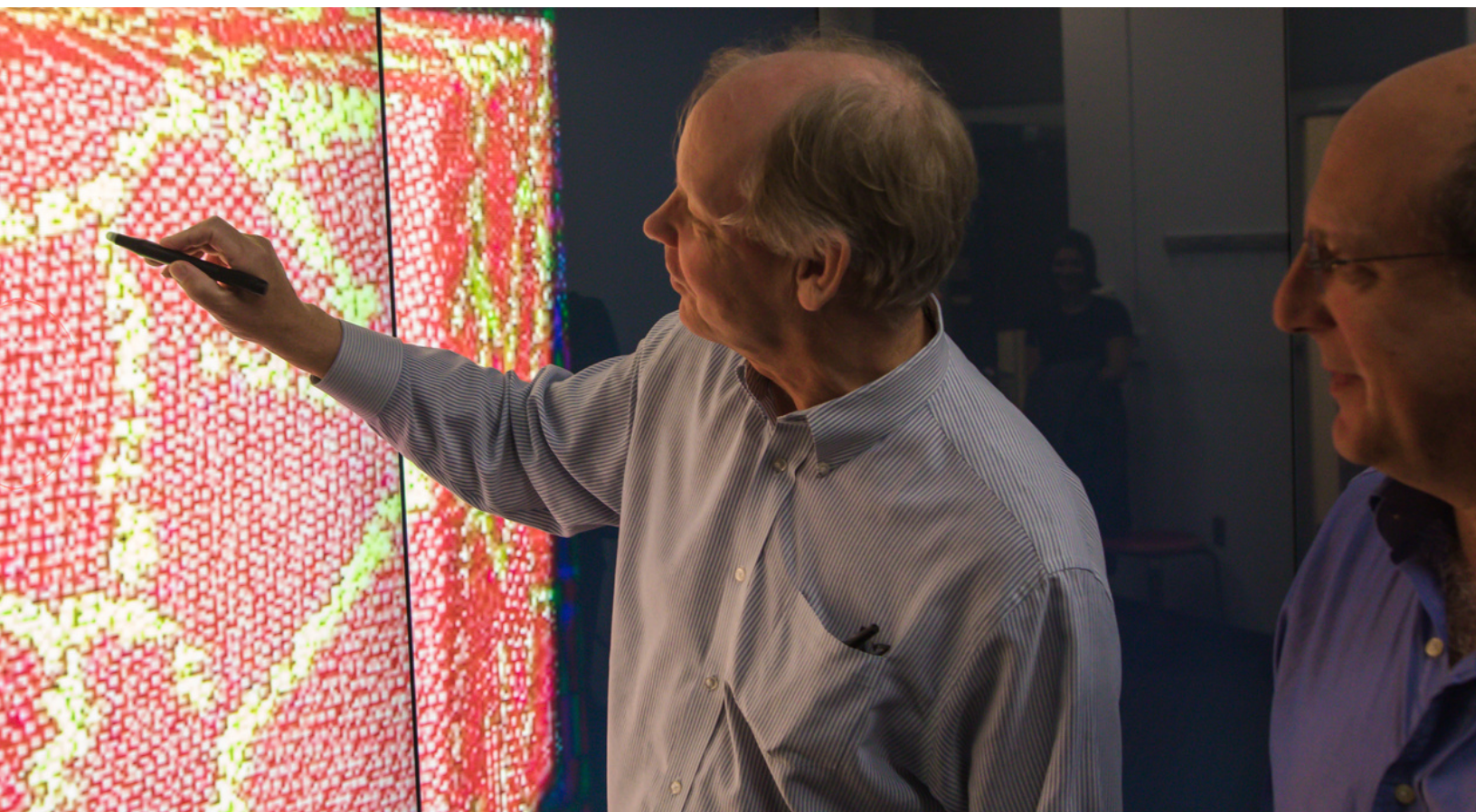
LTS played a leadership role in the **Humanities Lab**, a three-year Mellon-funded grant to transform our institution by integrating the Humanities across all disciplines on campus, showcasing our Humanities scholars, programs, students, and facilities, while intentionally integrating the work and impact of the Humanities across various disciplines, including social sciences, arts, and STEM fields.

EXPANDING ACCESS TO LIBRARY MATERIALS:

- We became a member of the **Center for Research Libraries**, giving Lehigh scholars more options for requesting specialized materials, and **HathiTrust**, joining more than 150 academic and research libraries committed to digitally preserving the cultural record.

- Launched our **OverDrive Black Voices Collection**. In rapid response to the growing need for access to resources about the Black experience, librarians curated a diverse collection of ebooks and audiobooks encompassing memoirs, novels, short story collections, nonfiction books, and poetry. Response from campus was immediate and enthusiastic: the first series, the Black Lives Matter Reading List, included 76 titles, which had been checked out over 200 times in June alone.

- Our Digital Scholarship Team is partnering with College of Education professors Tom Hammond and Al Bodzin to provide geospatial/GIS support for a four-year, federally-funded grant that studies the application of **geospatial technologies in secondary classrooms**, with a goal of promoting STEM-related college and career interest and geospatial thinking skills among a large, varied group of students in Delaware, Texas, Pennsylvania, and Washington.

"Every day, new technologies create new possibilities for changing how we teach, learn, research, and conduct the university's business."

2020 LTS STRATEGIC PLAN

- "Writing FDR: Exploring the Great Depression through the Voice of a President and the Pens of the People," doctoral student project, Christopher Brockman. The DST staff worked with graduate student Chris Brockman on visualizing the impressive collection of **10,000 letters written to the Franklin Delano Roosevelt administration** in the 1930s. The project was the digital companion to Brockman's dissertation, which he successfully defended in April 2020.

- Migrated our digital and institutional repository projects to the **Islandora** open source digital repository platform, enabling access to faculty and student publications and to student dissertations and theses.

200+
first-year students had the opportunity to engage and interact with artifacts spanning several millennia

17,938
interlibrary loan requests filled

3.16M

high-performance computing jobs run

consuming

12.8M

core-hours of computing

by

139

users

representing

42

majors or departments

affiliated with

39

Project Investigators

from

13

departments

RESEARCH COMPUTING

Our Research Computing team partnered with a faculty group led by Edmund Webb III on a successful $400K NSF grant to create a new High Performance Computing Cluster named "Hawk." The cluster consists of 34 nodes, 1,752 CPUs, 32 GPUs, 17.4TB memory, providing 15.3M core-hours of computing, and 77.3 TFLOPs of peak performance.

We expanded Sol, our existing cluster, by adding 6 nodes between April and June, 2020 via investments by Lisa Fredin (Chemistry) and the new College of Health. Sol now consists of 87 nodes, 2404 CPUs, 120 GPUs, 13.6TB total memory, providing 21.06M core-hours of computing, and 129 TFLOPs of peak performance. PIs with significant usage were:

- Biological Sciences - Greg Lang, Wonpil Im
- Chemistry - Lisa Fredin, Xioaji Xu
- Physics - Chinedu Ekuma, Dimitrios Vavylonis, Beall Fowler
- Mathematics - Yue Yu
- Chemical Engineering - Anand Jagota, Javier Buceta, Jeetain Mittal, Srinivas Rangarajan
- Mechanical Engineering - Alp Oztekin, Ed Webb, Hannah Dailey, Ganesh Balasubramanian, Frank Zhang
- Computer Science & Engineering - Brian Chen
- Materials Science & Engineering - Himanshu Jain, Jeff Rickman
- Civil & Structural Engineering - Paolo Bocchini
- Economics - Seth Richards-Shubik
- DATA - Oliver Yao

The **EWFM Data Center Cooling Expansion Project** was integral to keeping our data center operating and able to accept additional nodes for HPC. The HPC work directly supports teaching and research.

Over 128 faculty, students and staff attended 19 **Research Computing seminars** on topics such as Research Computing Resources, Programming and Data Visualization in Python and R, Concepts in Machine Learning and Text Mining.

- Launched the **TRAC Research Fellows** initiative to support students in research-intensive courses.

- Successful negotiation with Elsevier, Royal Society of Chemistry, AIP, Wiley, and PALCI Collective Collections Group led to **new resources for the campus community**, including the JSTOR collections, and the complete Wiley ebooks collection, an all-in Oxford University Press collection, the EBSCO Academic Collection, and online access to the New York Times, Wall Street Journal, and the Washington Post.

- Special Collections acquired the **Bethlehem Police Department Records** (1917-1949), an important addition to the local history collections.

- We published over 300 Special Collections finding aids in **ArchivesSpace**, giving greater discoverability of archival collections at Lehigh and around the world.

- Special Collections began archiving the personal accounts of Lehigh's community during the COVID-19 pandemic. Through the **Collecting COVID-19** project, we are collecting written journal entries, recorded audio or video descriptions or stories, oral histories, saved social media posts, and other types of multimedia. You tell the story. We'll do the rest.

- The Lehigh Libraries joined **Project ReShare** as a founding member in April 2020 to develop the first user-centered, community-owned resource sharing platform that will support unprecedented access to print and electronic collections across the globe.

- The Library implemented **BrowZine**, a tablet, mobile, and web application that lets users easily browse, read, and monitor thousands of scholarly journals available through the Lehigh Libraries. BrowZine sorts Lehigh's e-journals by broad subject categories and then into narrower disciplines. The result is an easy and familiar way to help you keep up with the latest research in your field.

- **Migration of The Brown and White** to Veridian ensures a better user experience for members of the Lehigh community seeking information about Lehigh history.

- To support Lehigh's research mission, Lehigh Libraries became an **institutional member of ORCID**—or Open Researcher and Contributor Identifiers—which provides unique IDs that researchers can use to identify their academic work, while helping funders, publishers, scholarly societies, and other researchers to quickly find publications.

- **Architecting the Secure Health Data Enclave** As Lehigh boldly expands into health related research, LTS has been collaborating with researchers and leaders around campus to design secure, compliant research solutions.

TECHNOLOGY AND THE PERSON
Dr. Greg Reihman with a packed house for "Thinking Through Technology," one of several LTS 5x10 Symposium offerings during fall undergraduate student orientation. Students discussed the ways technology is changing how we approach fundamental questions about who we are and who we want to become.

03

KEEPING CAMPUS OPEN
AND OPERATIONAL

TOP 10 LTS HELP DESK TOPICS FOR AUGUST 2020

1. **COVID LAB TESTING**

2. **COURSE SITE**

3. **ACCOUNT/IDENTITY MANAGEMENT**

4. **ZOOM/PANOPTO**

5. **SOFTWARE**

6. **ENTERPRISE APPLICATIONS**

7. **EMAIL**

8. **DEVICE CONFIGURATION**

9. **LIBRARY**

10. **NETWORK (WIRED, WIRELESS)**

As spring 2020 brought many new requests from our campus community as Lehigh began to teach, learn, and work remotely, we built on our long tradition of ensuring that our cyberinfrastructure, technologies, software, and support all meets emerging needs of those across campus.

10,883
help requests processed in spring, 2020, up from 5,801 in fall, 2019

AUGUST HELP REQUESTS SINCE 2000
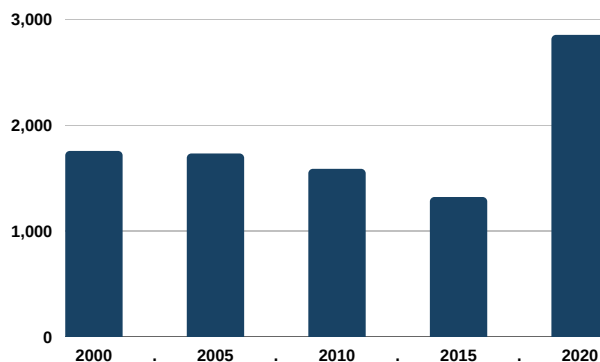
BANNER TO THE CLOUD In summer 2020, we migrated Banner—our enterprise software for finance, enrollment, and much more—to the cloud, making enterprise systems applications more responsive, agile, and aligned with campus needs, and improving the user experience for students, faculty, and staff.

Over 400 faculty and staff attended our six spring 2020 **Business Continuity workshops**, highlighting tips for preparing to work remotely, communicating and collaborating while working at home, and using Lehigh software remotely.

In 2019, LTS partnered with Human Resources to formally **promote and recognize LTS seminar participation**. Seminars are promoted in HR's PageUp performance management system and in HR staff development communications. LTS training participation is recognized and tracked in PageUp.

Through our **Duo Two-Factor Authentication Project** for faculty and staff, we saw a 99% reduction in compromised faculty and staff accounts. Planning is underway to extend the protection for students in the 20-21 school year.

Expansion of software and computing resources to meet the demands of students, faculty and staff working remotely. The LUapps team quickly added compute and storage capacity to the Citrix environment to support online teaching and remote work for faculty and staff. They also deployed Citrix XenDesktop (VDI) to provide virtual desktops to support the remote work effort. These VDI instances are helpful for those faculty and staff members who don't have access to laptops, desktop RDP, or if their work desktop becomes inaccessible. Utilizing a special feature in Citrix, the team deployed two delivery groups to make available all public site lab systems for additional resources for students.

Increasing VPN to support the Lehigh community. The Network Engineering team added additional VPN capacity by repurposing decommissioned firewalls to support online teaching and remote work. In addition, they created two separate VPN pools to support students connecting remotely from multiple locations around the globe. VPN peaked at around 1,200 concurrent users.

Launched new software applications and services:

- Respondus
- Adobe Creative Cloud
- LinkedIn Learning (in collaboration with the Center for Career and Professional Development and Human Resources)
- Slack Enterprise Grid

Physical access integrations: Enterprise Systems architected and automated processing physical access to align with COVID-19 Response Team policy regarding movement on campus to support campus health and safety standards. This included collaborating with IDEAL, Enrollment Management, Client Services, CITL, and Technology Infrastructure and Operations groups to create a daily processing of self-assessment, Health and Wellness isolation and quarantine, and campus access needs. This also included downstream processing efforts such as reporting and operational badging stations.

Lehigh COVID-19 Dashboard: Enterprise Systems architected and automated processing of Vault Health and Heath and Wellness Center data for reporting purposes. In collaboration with the Office of Institutional Research and Strategic Analytics, this data was used to create both internal and external dashboards for campus leadership and the campus community.

114%

increase in concurrent virtual desktops licenses

0

breaches of regulated, sensitive data despite dramatic increase in attacks against Lehigh
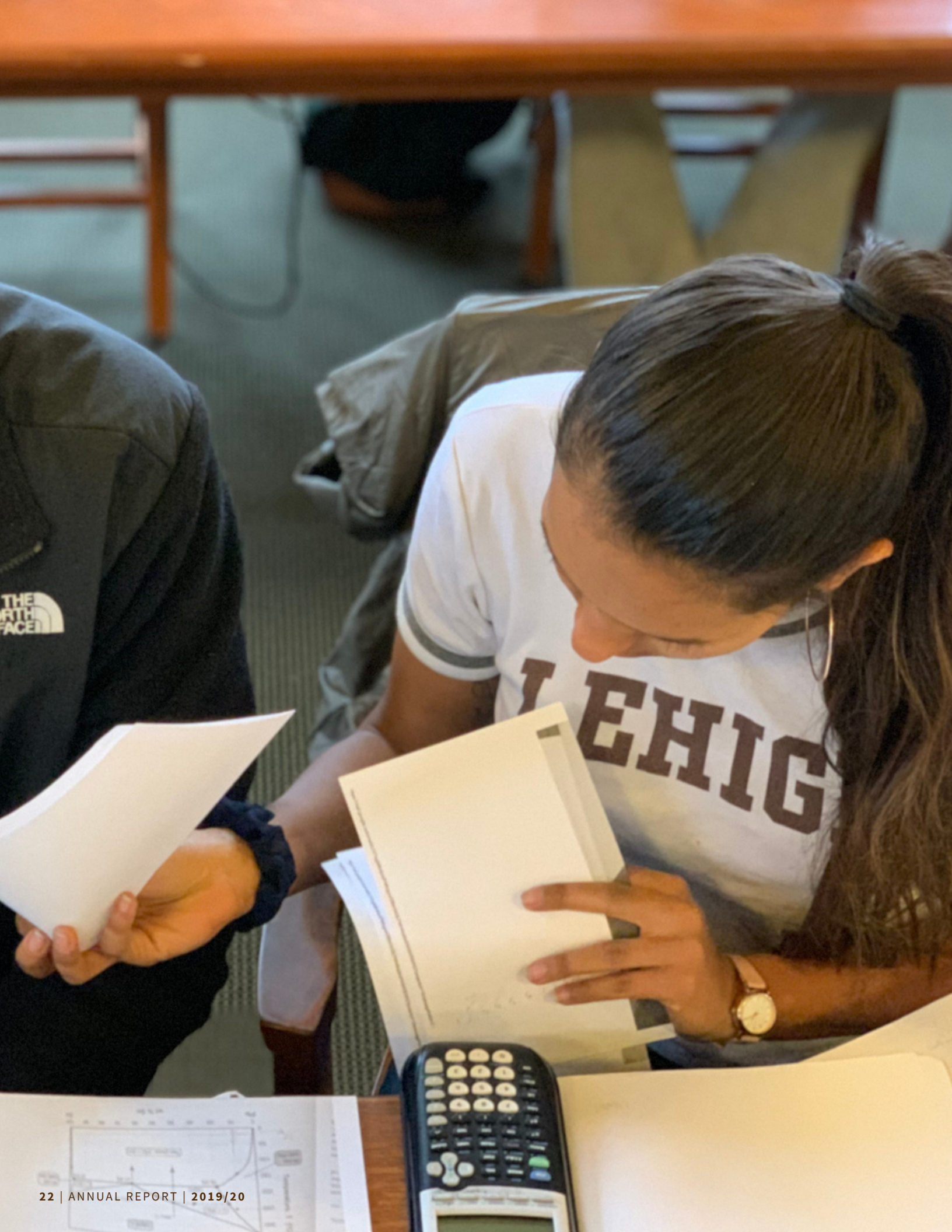
The **HawkWatch COVID-19 Self Assessment** tool was developed with the Lehigh COVID Response Team to monitor the daily health of the campus community.

Launched Jamf, a cloud-based management service that helps LTS maintain security and deliver software to nearly 1,000 Macs, iPhones, and iPads.

The **Residential Halls wireless project was completed** with the deployed wireless access points increased from 920 to 2,370, installed in all bedrooms and common areas providing 100% wireless coverage in all Lehigh student housing, with latest technologies and standards, and increased performance. We improved wireless coverage for 10 academic buildings over winter break.

The Systems Engineering and Instructional Technology teams **optimized Moodle** for high-availability and redundancy including three load-balanced web front ends, triple redundant database servers with replication, and a high-speed networked redundant file storage server.

Web & Mobile Services created the new **College of Business** website, partnered with Registration & Academic Services to implement **CeDiploma**, a certified electronic diploma option allowing students to request digital versions of their official diplomas, and helped **Enrollment Management Services** create new portals for applicants and admitted students.

Zoom usage increased sharply since March as faculty, students, and staff transitioned teaching, learning, work, and research to a remote environment.
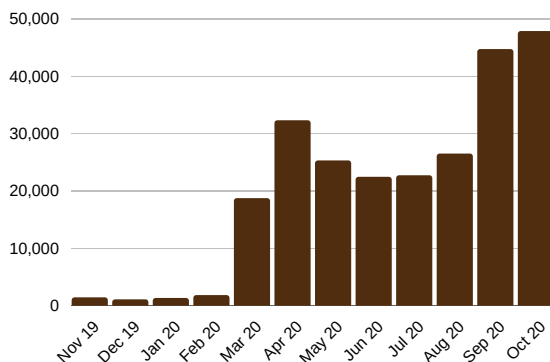
LTS provides technical support for **Lehigh University Police Department** (LUPD) systems and we redeveloped LUPD's Property Registration Online (PRO), allowing members of the Lehigh community to register electronics and other items of significant value.

Technology Infrastructure and Operations met its commitment to keeping our network services **operational over 99% of the time**, with nearly all services at 100% uptime.

We completed the migration of Lehigh's decades-old traditional PBX phone system to **Cisco Unified Communications**, transitioning 5,000+ end points (user and emergency phones, faxes, and point-of-sale systems) to next generation Voice over Internet Protocol (VoIP).

Computing Consultants **upgraded over 1,000 computers to Windows 10**, Microsoft's newest, most secure operating system, and replaced over 500 PCs with newer systems compatible with Windows 10.

Client Services staff taught **15 software and technology seminars on topics** such as Google Mail, Calendar, and Drive, and Computer Data Best Practices, with over 300 attendees.

Successfully completed a multi-year transition from a legacy email system to **Gmail**, increasing access to the cloud-based academic and administrative software found in G-Suite.

3,886
Wireless access points deployed on campus

176
Websites developed and maintained by Web & Mobile Services

191%
increase in Bomgar sessions conducted to provide assistance to students, faculty, and staff working remotely

04

LEARNING WHILE EARNING: LTS STUDENT EMPLOYEES

Students are an important part of Library and Technology Services at Lehigh University. LTS is one of the largest employers of students on campus. Opportunities span from entry-level positions requiring no specific experience to highly specialized roles working with innovative and cutting-edge technologies.

Students find challenging and fulfilling work in many areas of LTS, including:

- Lehigh Libraries Special Collections
- TRAC Fellows
- Information Security
- Digital Media Studio
- Communications & Graphic Design
- Computing Consulting
- STARS (Student Technology & Repair Services)
- CITL Student Fellowships
- Help Desk
- Library Circulation Desk

The Library launched its inaugural **Student Library Advisory Board** (SLAB) composed of undergraduates across the Colleges. Over the course of the academic year, SLAB helped library staff think through our social media presence, library space, and our leisure reading collections, providing valuable insight that impacted library work.

**Adrian Suarez '22
Help Desk Consultant**

Jenny Lee '21 | TRAC Fellow
"Not only has TRAC introduced me to a community of intelligent and compassionate scholars, it has shaped the way I think about education and scholarship. As a Mentor Fellow, I hope to embody our mission and support fellows in their efforts to make a lasting impact on Lehigh's learning community."

Matthew Briggs '23 | Digital Media Studio
"Working at the DMS Lab has taught me technical skills using multimedia programs like Photoshop and Final Cut Pro, and given me real world experience shooting professional quality video of lectures and talks here at Lehigh."

Anna Francisco '21 | Help Desk
"I enjoy helping the Lehigh community while also gaining technical knowledge. At the end of each shift I can walk away knowing I brought clients one-step closer (if not all the way) to solving their technical difficulties."

Matt Levy '20 | Information Security
"You get what you give. If you put in the effort to learn new things and want to do something in the cyber realm after college, this is definitely the best opportunity that you can take at Lehigh."

Niki Morrison '20 | Communications
"Working in communications allowed me to challenge myself and the way I process ideas. I've had the most joy in seeing my work viewed by fellow students and faculty across campus. I now know that communications is what I want to incorporate into my career."

Jordan Wolman '20 | Lending Services
"My job at the library has exposed me to new dedicated people at Lehigh who are working to ensure students have a top-notch educational experience. I've learned important organizational and communication skills that I know will serve me well in future endeavors."

Michelle Modzelewska '20 | Computing Consulting
"It's a very fulfilling experience. Actually visiting clients, making an impact on campus, keeping the system of computers running. It's just a work study, but in reality, you're doing much more than work study."

Ved Patel '19 | CITL
"I love when students come into the Visualization Lab and use the really cool VR applications, seeing their reactions, and talking to them about how it's going to affect their coursework, and if it actually affected their understanding of things."

Ben Brindle '21 | Special Collections
"Working for Special Collections has taught me important research and archival skills and has given me the opportunity to contribute to meaningful projects while learning university history."

EVENTS AND EXHIBITIONS

"My goal was to create the best photographic archive that had ever been done on a president. I wanted to make lasting images for history. So I was looking for all of these little behind-the-scenes moments."

Pete Souza

The Friends of the Lehigh Libraries welcomed presidential photographer Pete Souza to campus on Feb. 6. His daylong visit began with meetings with student leaders, a book signing at FML, and concluded with his sold-out lecture at Zoellner Arts Center, followed by a campus reception. His talk coincided with a solo exhibition of his photography, *Obama: An Intimate Portrait*, on display in the Fairchild-Martindale Library Study Gallery.

We welcomed over 35 new faculty at the two-day 2019 university-wide **New Faculty Orientation** where attendees heard from a variety of Lehigh representatives on topics including academic integrity, research, student services, equity and community, legal counsel, university benefits, and LTS essentials.

More than 200 incoming students and their families attended the **Tech Talk** webinar. The session featured a panel of computing consultants and managers, describing Lehigh's technology environment and offering practical advice.

CITL-sponsored Communities of Practice in AR/VR, Geospatial Tools, and Online Teaching and Learning provide faculty opportunities to share experiences and best practices with colleagues in their areas of expertise and interest. During fall 2019, 70 faculty, staff, and students participated in these events.

CITL Winter Workshop: Course Design, Pedagogy and Technology. Fifty-five faculty joined us for a full day of workshops with sessions on matrix games; teaching with augmented and virtual reality; tips for designing multimedia and data-intensive assignments, and tools for content, collaboration, and communication.

Students in the introductory art history course Ancient to Medieval Art and Architecture demonstrated the game they created for **Lehigh's first ever in-class, student-created augmented reality project**, [AR]T ADVENTURES, at a reception at the Lehigh University Art Galleries on Dec. 5. With support from CITL, students learned to program the game using Metaverse, a technology tool that renders digital elements in a live picture of the real world via smartphone.



NEW FACULTY ORIENTATION
August 19-20, 2019

BRINGING 21ST CENTURY TECHNOLOGY TO ANCIENT ART
[AR]T ADVENTURES reception
Lehigh University Art Galleries
December 5, 2019

UMOJA House

We celebrated the opening of the UMOJA House Family Gallery Exhibit at FML, created by Lehigh's award-winning staff photographer Christa Neu. The retrospective in portraits honors the current and former residents of the UMOJA House, founded in fall 1989 as the university's first multicultural residential option. The exhibit and reception were co-sponsored by the Friends of the Lehigh University Libraries, the UMOJA 30th Committee, Lehigh University Art Galleries, and University Communications and Public Affairs.
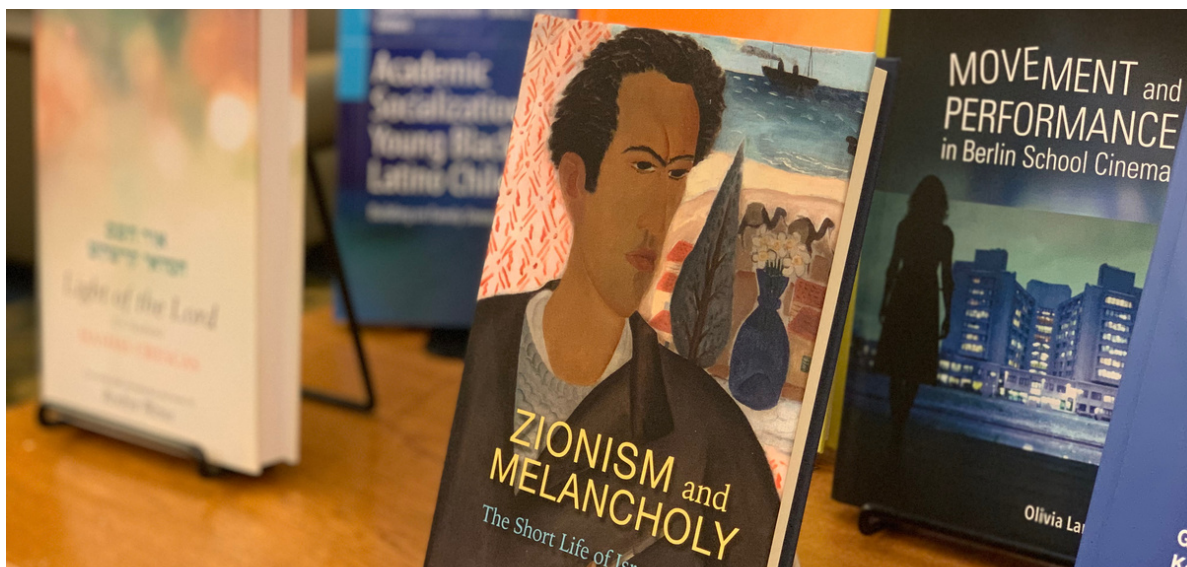
HARVEST OF IDEAS RECEPTION
Linderman Library Rotunda
September 16, 2019

The Friends of the Lehigh University Libraries hosted its 8th annual **Harvest of Ideas** reception in the Linderman Library Rotunda for over 35 faculty who published or edited a book or composition during the previous year.

The Office of Distance Education provided technical support for **numerous high-profile events that were forced to move online during spring and summer 2020**. Offices supported include the Provost's Office, Admissions, Office of Economic Engagement, the College of Health, the College of Engineering and Applied Science, UCPA, Graduate Student Life Office, ROTC, ERAC, the Student Senate, the Office of Sustainability, and Risk Management.

In October, we welcomed the **Student Senate Executive Board**, the **Lehigh University Board of Trustees**, and President John Simon to the Cafe @ FML for the Trustee Breakfast, followed by a tour of library places and spaces.

Artists celebrated personal identity, creativity, and expression at the opening of the second annual **Be Your Own** art exhibition in the Fairchild-Martindale Library 6th floor innovation space. The mixed media exhibit, created by nearly 100 students, faculty, and staff, is based upon 2019's theme of spiritual, emotional, or physical relationship with roots, origins, and migrations. Organized by the **Lehigh University Center for Gender Equity and co-sponsored by Library and Technology Services**, Be Your Own aims to validate and acknowledge unheard and unseen stories at Lehigh.

More than **500 students from the Allentown School District** got a taste of how Lehigh students use libraries when they toured and talked with LTS staff at Linderman and Fairchild-Martindale Libraries during a recent visit. The middle school students toured the study spaces, art exhibitions, and media resources in Fairchild-Martindale Library, before meeting with staff from the Center for Innovation in Teaching and Learning to experience virtual reality and the Visualization Lab.

BREAKFAST WITH THE BOARDS
(from left) Lehigh University Trustee Anne Kline chats with Greg Reihman and Bruce Taggart at a reception with the Lehigh Board of Trustees and members of the Student Senate Executive Board at Fairchild-Martindale Library in October.

The Friends of the Lehigh Libraries
Speaker Series

Diaries as Data: How a Computer Scientist Taught an English Professor How to Read the Most Valuable Documents of Walt Whitman's Bohemian Period
Eric P. S. Baumer, 2019

Preservation of the Friedensville Mine Site President Pump Engine House
Mark Connar and Jerry Lennon, 2019

Making the Renaissance Manuscript: Discoveries from Philadelphia Libraries
Nicholas Herman, 2020

Information Hunters: When Librarians, Soldiers, and Spies Banded Together in World War II Europe
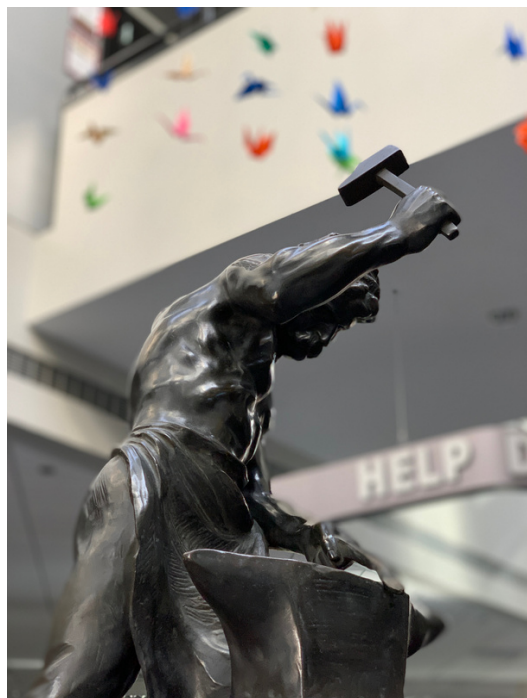Kathy Peiss, 2020

Obama: An Intimate Portrait
Talk and exhibit
Pete Souza, 2020

Walt Whitman (1881) Credit: Library of Congress

PLACES AND SPACES

LIBRARY LENDING SERVICES AND THE HELP DESK CO-LOCATE AT FML

In the summer of 2019, LTS transformed the main floor of the Fairchild-Martindale Library, expanding public space while consolidating service points. We merged Lending (library circulation) Services and the Help Desk (technology) Service into one combined service point, providing a single, central location for students, faculty, and staff seeking help.

The new LTS Help Desk offers more unified, integrated, and effective service. Through phased-in cross-training and position upgrades, the new LTS Help Desk also benefits our teams by creating professional development opportunities.

SPOTLIGHT ON THE HELP DESK

The LTS Help Desk embodies the LTS integrated organization model of service. Technical support and library specialists work together to assist students, faculty, and staff with a broad range of questions. One-stop-shopping and concierge-level service ensure that our clients receive immediate assistance when possible and streamlined referral to specialists when needed. The Help Desk offers extensive service hours and can be reached via walkup, phone, email, chat, and texting.

Help Desk staff before the days of masks and plexiglass.

THE GRIND CAFE OPENS AT FML

Using the space gained from the consolidation of the Help Desk and Lending Services, LTS and Lehigh Dining joined forces to offer the new focal point for dining and socializing in the library. We welcomed **The Grind** cafe to FML on September 3rd, with a Grand Opening celebration featuring the Marching 97, Clutch, and members of Lehigh leadership.

The 45-seat cafe is a vibrant and inviting space where students can dine, work, collaborate, and socialize in a casual atmosphere.

The replacement of the west end facade with floor-to-ceiling glass offers a welcome connection to the outdoors, where students and visitors can enjoy more natural light and an open view to the EWFM Patio, now with additional outdoor seating.

100

seats for individual and group study added in the libraries (over 600 since 2014)

WHERE DISCOVERY, EXPLORATION, CREATIVITY, AND INNOVATION TAKE ROOT

A hub of academic and scholarly activity on campus, the Lehigh Libraries offer collaborative and innovation work spaces, classrooms, private and semi-private study nooks, group meeting rooms, and open study areas with ample whiteboards and flexible seating, spanning all floors.

Souza Exhibit Opens at FML

As chief official White House photographer, **Pete Souza** spent more time alongside President Barack Obama than almost anyone else. His years photographing the president gave him an intimate behind-the-scenes view of the unique gravity of the office of the presidency—and the tremendous responsibility that comes with it.

Fifty of Souza's iconic photographs, taken over the President's two terms in office, were on display in the Fairchild-Martindale Library Study Gallery in *Obama: An Intimate Portrait*, which ran through Feb. 28.

BEYOND THE GRIND

FML is much more than a space for study. It's a place to socialize with friends, grab a bite to eat, and surround yourself with art! This year we hosted a new Lehigh University Art Galleries exhibition, British Abstraction: Three Views, in the Fairchild-Martindale Study Gallery. In the bustling 4th floor lobby just outside The Grind, we installed a 98" wall-mounted digital sign to inform students and other visitors of upcoming events, new service offerings, staff and student spotlights, and more.

WHERE THERE'S ZOOM, THERE'S A WAY
On April 3, 2020, two weeks after Covid-19 forced the cancellation of all in-person campus events, LTS staff, friends, and former colleagues met virtually with Bruce Taggart to celebrate his 20-year career as he stepped down as Vice Provost for Library and Technology Services.

Bruce Taggart, Vice Provost for Library and Technology Services, steps down in 2020

Lehigh News, Oct. 22, 2019 After leading campus-wide infrastructure improvements, increasing faculty development opportunities and spearheading major library renovations, [Bruce] plans to step down—or "pivot," as he prefers to say—leaving behind a legacy that has had a lasting impact on teaching, learning and student life at Lehigh. "Bruce Taggart's many contributions to LTS and the wider Lehigh community have helped our university evolve significantly over the past two decades," says Provost Pat Farrell. "His vision and passion for innovative technologies and collaborative spaces have provided countless opportunities for students, faculty and staff. We wish him the very best as he begins his next chapter."

We wished fond farewell to LTS staff who retired this year

Brenda Bartholomew	Gayle Nemeth
Marcia Burkit	Mary Ann Otto
Evan Conyers	Manuel Pena
Peggy Dilliard	Annette Ruhe
Susan Donchez	Pamela Steigerwalt
Gail Fosburg	Bruce Taggart
Timothy Foley	Ronald Wagner
Deborah Henritzy	Randall Wambold
Gerald Lennon	Patricia Ward

Library and Technology Services Staff 2019-2020

Stacey Alderfer
Stephen Anthony
Naazer Ashraf
Michael Aversa
Issa Awwad
Carrie Baldwin-SoRelle
Edward Ballinger
Rebecca Bastian
Richard Bauer
David Bernini
William Bettermann
Lois Black
Daniel Brashler
Jarret Brown
Rebecca Bruneio
Denise Campion
Mark Canney
Lori Carroll
Anthony Casamassa
Amanda Caton
Ilhan Citak
Erin Clavier
Tara Coyle
Donna Cressman
Christopher Creswell
Forest Crowley
Clark Damron
Kelly Decker
Jeff Deschler
Thomas Donahue
Daniel Dougherty
Kathleen Dugan
Gregory Edwards
Bruce Eisenhard
Keith Erekson
James Eshleman

Colin Foley
Kathleen Frederick
Gale Fritsche
Erica Gluszynski
W. Judd Hark
Doreen Herold
Phillip Hewitt
Grant Hittinger
Richard Houck
Daniel Huang
Lizanne Hurst
Jon Hutchinson
Dale Jacobs
Andrew Januszak
Alex Japha
Devin Jayetileke
David Jones
Sachin Joshi
Peggy Kane
David Keppel
Ilena Key
Stacey Kimmel-Smith
Allen Kingsbury
Cristina Koorie
Noel Kratzer
Stephen Lewis
Steven Lichak
Sarah Loosbrock
Jeremy Mack
Christopher Martin
Julia Maserjian
Lisa McColl
Keith Meeker
Chulin Meng
Wayne Mery
Lorin Miller

Mark Miller
Daniel Mills
Margaret Misinco
Janice Mitchell
James Monek
Billy Morris
David Morrisette
Alex Morykin
Patrick Murphy
A. Allen Myers
Boaz Nadav-Manes
Jeff Nass
Jane Nigrelli
Daniel Olsheski
Ryan Pacala
Alexander Pacheco
Timothy Palumbo
Barbara Parenti
Justin Patterson
Jesse Pearson
Margaret Petrovich
Glenn Piper
Mark Piskorski
Bryan Pitkin
Brian Posivak
Brad Price
David Ramsay
Raymond Randall
Eunice Rankin
Doug Reese
Gregory Reihman
Nathaniel Righi
Matthew Romero
Luis Rosario
Tania Rossi
Jacob Ruttle

Ashley Ryan
Hope Sagnip
Steve Sakasitz
John Santamaria
Theresa Sarik
Daniel Schwartz
Mark Scott
James Secrest
Gail Sheek
Bobby Siegfried
Brian Simboli
Larry Simek
Heather Simoneau
Gregory Skutches
Jason Slipp
Kent Smith
Sara Solares
Munroe Sollog
Jason Spiegel
Jason Stanford
Michelle Suranofsky
Diana Toolan
John Troiano
Dario Varga
James Vincent
James Wagner
Kurt Weber
Robert Weidman
Sharon Wiles-Young
Tricia Wilson
Keith Wojaczyk
Jasmine Woodson
Holly Zakos
John Zekind
Eric Zematis
Michelle Zhao
Helen Zuercher

"LTS has always been flexible, agile, and responsive to changing technology needs. We look forward to working with the broader campus community as a partner in the University's evolving research and learning infrastructure, and maintaining the superior level of performance and reliability that students, faculty, and staff expect of our systems and services."

Ilena D. Key, Ed.D.
Chief Technology Officer

"The Lehigh Libraries transform the ways that faculty, students, and the public create, discover, and access information, whether on-campus, in our diverse communities, or halfway around the world. We are your expert partners to innovate and explore collections, services, digital curation, and preservation of Lehigh's scholarly resources and legacy."

Boaz Nadav-Manes
University Librarian

"LTS is committed to fiscally responsible decision-making as we all work to mitigate the impacts of the pandemic. Our sound strategic planning helps ensure funding and support for technological, academic, and scholarly resources that enrich the Lehigh experience and advance the university's goals."

Jesse Pearson
Director, Administration & Planning

"Today's cybersecurity landscape looks much different than even a few short years ago, with organizations under relentless (and more creative) attack from online threats. Protecting Lehigh's systems and data through proactive threat reduction and security response measures is our singular focus -- all day, every day."

Eric Zematis
Chief Information Security Officer

"In countless conversations across campus, Lehigh faculty, students, and staff are working together to anticipate and define what teaching, learning, research, and campus administration will look like in 2021. LTS is committed to partnering with colleagues to promote new pedagogies, expand our scholarly collections into emerging fields, deploy emerging digital technologies, meet ever-growing data storage and research computing needs, and develop the support systems needed to continue Lehigh's tradition of educational and research excellence."

Greg Reihman, Ph.D.
Vice Provost for Library and Technology Services
Director, Center for Innovation in Teaching and Learning

LTS LIBRARY & TECHNOLOGY SERVICES

HELP US KEEP DOING GREAT THINGS.

lts.lehigh.edu/ltsgiving

GO THE CAMPAIGN FOR LEHIGH

LEHIGH
U N I V E R S I T Y

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