

# 2019

# Office of Information Technology Accomplishments Report



Office of Information Technology  
UNIVERSITY OF COLORADO **BOULDER**

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# BUFF PORTAL SUCCESSFULLY LAUNCHES

Buff Portal is CU Boulder's new online student portal, replacing the student tab in MyCUInfo. This new portal is a comprehensive online experience that will serve as a one-stop shop to enhance how students find the resources they need to succeed and thrive at CU Boulder.

In March 2019, OIT released a “beta” version of the portal and by August, 10 percent of CU Boulder students had visited the new portal with over 2,000 providing feedback. The team followed an iterative design process based on agile methodologies, building the portal in-house in close collaboration with students and staff. Regular feedback was used to guide updates and redesigns, empowering OIT to respond to the changing needs of our campus. The student response to the Buff Portal has been extremely positive, with users describing it as intuitive and “*Pretty Gucci*”, and reporting that Buff Portal simplifies many CU processes.

“So awesome! This is so much easier to use and navigate, and as a design student, I absolutely love the interface! Sko Buffs!”

This work was made possible through collaboration and strong partnerships with Student Affairs, Enrollment Management, Undergraduate Education, Graduate School Dean's Office, Strategic Relations & Support, and several groups within OIT.

# ENABLING FUTURE ONLINE STUDENTS THROUGH NEW AUTOMATED INFRASTRUCTURE

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Education is constantly evolving and our campus has to be flexible and adapt to the ever-changing needs of our students. One way our campus is transforming is by focusing on online education. Partnering with Coursera, OIT worked with colleagues across Strategic Resources and Support, College of Engineering and Applied Science, and Academic Affairs to launch the world's first globally scalable [Massive Open Online Course \(MOOC\)-based electrical engineering master's degree \(MS-EE\)](#).

For this launch to be possible, OIT partnered with University Information Systems (UIS) to develop and create new integrations and processes connected with our existing Student Information System now known as the Automated Platform for Online Programs (APOP). With this new infrastructure, individuals from all over the world can become CU Boulder students. They can enroll, pay for courses, and earn micro-credentials, certificates, and degrees. Online students do not need to go through the traditional application and admission processes, but rather utilize innovative performance-based admissions criteria, gaining admission to courses and the program by proving their expertise and skills. This new infrastructure facilitates a vastly more accessible and inclusive way of learning and MS-EE is the first program of many to be offered by CU Boulder utilizing this new platform.

**“CU teams across our entire administrative and academic enterprise have come together to innovate our learning management systems and create a world-class automated enrollment management system that allows new students almost real-time access to the world of our CU Boulder content. It puts a real emphasis on improved student experience.”**

*Robert H. McDonald, Dean of University Libraries & Sr. Vice Provost of Online Education*

# DEVELOPING A ROBUST DATA ECOSYSTEM

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Universities accumulate mountains of data. But what is done with all this information? Here at CU Boulder, the Office of Data Analytics (ODA) specializes in data integrity, access, analysis and visualization. In order to best support ODA and the campus, OIT is bringing many data sources across campus into one location for deeper, more meaningful analysis.

Over the past year, OIT prioritized the creation of a data services team. The team partnered closely with ODA to evaluate and improve the university's "data lake" (a single store of all CU Boulder's enterprise data) and data infrastructure. From that work, the team chose a platform, Amazon Web Services, and is working with the Office of Integrity, Safety and Compliance to ensure proper security. Work will continue to evolve in this space so that the campus can make better data-informed decisions. With this, we can identify and act upon campus opportunities in a more productive and efficient way.



# SEAMLESS OVERHAUL OF ESSENTIAL IDENTITY SERVICE

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Many may not have noticed, but February 2019 marked the complete overhaul of one of CU Boulder's most essential IT services, the [Identity Manager service](#). Oracle Identity Manager (OIM) replaced the legacy Sun Identity Manager application. This service creates and updates IdentiKeys for CU Boulder students, faculty, and staff. It's such an integral part of the campus community's daily lives that any problems to this essential service can significantly impact campus productivity.

Although this transition was long and involved, the final launch had minimal impact on end-users. Behind the scenes, OIM was actually in production for several years prior to February 2019, and the project team worked to quietly and incrementally move as much functionality as possible to the new platform ahead of the cutover. From the time that accounts were created in OIM in parallel with the legacy service until launch, there were more than fifty official changes deployed, with legacy components being turned off along the way. This approach allowed team members to learn and improve with each transition, and the final cutover only required a small number of changes.

## Benefits of the new service

One of the main enhancements with OIM is the new end-user interface [identikkey.colorado.edu](#). The cleaner design is more intuitive, offers additional self-service options, and provides a better first impression for incoming students and employees. Because the new site is abstracted from OIM, it is more flexible, customizable, and creates opportunities to bring in other aspects of identity and access functionality for users.

The move to OIM has automated work that was previously manual and allowed the retirement of numerous legacy processes that were fragile and hard to support. The new platform and supporting architecture position us to be more stable, extensible, event-driven, and consistent. From a security and vendor perspective, OIM is fully supported, regularly patched and updated, and supports custom functionality.

This project took a village and required support from many teams. Leveraging CU Denver's OIM expertise and infrastructure helped create a community of collaboration among the Identity & Access teams across the CU system that still persists today.

# CU BOULDER'S FIRST GIRLS WHO CODE CAMP

According to the National Center for Women & Information Technology (NCWIT), in 2016 only 19 percent of computer and information sciences bachelor's degree recipients were female. While at the same time, 57 percent of bachelor's degree recipients were female. To try and close that gap, American lawyer and politician, Reshma Saujani, founded the tech organization Girls Who Code which offers summer immersion programs and camps for girls in elementary school through high school.



This past summer, a couple of OIT staff members hosted the first Girls Who Code camps on the CU Boulder campus. The team submitted a grant proposal to the Office of Diversity, Equity and Inclusion and received support from NCWIT's CEO and co-founder, Lucy Sanders, and the School of Engineering.

The first series of clubs were held in July with about 25 participants ranging from third grade to high school seniors. Third through fifth graders were grouped together for four half-day sessions during which they toured OIT's data center, experimented with the code editor Scratch, heard from women and men with STEM-based careers, and worked through the Girls Who Code curriculum. One of the club facilitators is a CU Boulder student who shared her experiences working on NASA projects while completing her degree. In addition to activities that the younger girls participated in, the girls in the sixth through twelfth grade camp were tasked with creating a coding project plan and building the app they proposed. The final projects included a gymnastics game and an ocean cleanup game which the girls built.

We hope that this is just the beginning of a movement that spreads across CU's four campuses and produces a pipeline of girls who choose to pursue STEM fields of study.



# CANVAS WEB GRADING SYNC: FACULTY ASKED, OIT RESPONDED

Submitting final grades to the Office of the Registrar was a tedious process for instructors. Before submitting, faculty had to take more than 20 steps and mistakes easily occurred. This process was quite frustrating, especially at the end of the semester, one of the busiest times of the year.

When our campus was evaluating new learning management systems, one of the top faculty requests was to have a system that provides an easier way to submit final grades. Once Canvas was chosen, creating a solution that would sync students' final grades in Canvas to the Registrar's web grading system was a top priority.

OIT collaborated with University Information Systems (UIS), the Office of the Registrar, Continuing Education, and the Academic Technology Advisory Group (ATAG) to develop a tool that allows instructors to sync their students' final grades in Canvas to the Registrar's web grading system. This solution, the Web Grading Sync tool, saves faculty time while also protecting students' data. The Web Grading Sync tool was also shared with colleagues from other CU campuses so they can benefit from this collaborative effort.

## STAYING IN TUNE WITH RESIDENTIAL STUDENTS NEEDS

The way students consume media has evolved. Based on comprehensive usage data and survey feedback, Residence Life identified that students were underutilizing existing cable TV service in residence halls and desired a streaming TV option that would enable mobility when consuming video entertainment. In the interest of providing value both in cost and positively impacting the student experience, OIT and Residence Life partnered up to deliver Stream2 IPTV service from Apogee to the CU Boulder campus. With Stream2, students can download an app to watch live TV and sports from their computer, tablet, phone, Roku, or Amazon Firestick, giving them access to their favorite shows from anywhere on campus! This new service also comes with 20 hours of DVR recordings.





# COLLABORATING WITH FACULTY TO PROMOTE ACTIVE, ENGAGING, AND EXPERIMENTAL LEARNING

In spring 2018, funding was made available by the College of Arts and Sciences for a three-year initiative that promotes active, engaging, and experiential learning through the use of technologies. OIT's Arts & Sciences Support of Education Through Technology (ASSETT) team, is using funding to bring participants together from across the college to collaborate on four cross-disciplinary teams, each working on its own objective:

- Develop resources and learning objects related to metacognition and mindfulness, which can be implemented in courses across the college.
- Establish a multimodal publishing collective of students and faculty to produce projects that are open and accessible to the community at large.
- Explore how we can use technology to generate meaningful opportunities for students, both inside and outside the classroom.
- Integrate data science methods and tools across the curriculum to create an inclusive environment for data science in the College of Arts & Sciences.

**“An overarching objective of the incubator is the formation of a sustainable community of educational innovators. We think this initiative, if successful, could serve as a template for how to effect change in, not just higher education, but in large organizations. Perhaps most importantly, the more successful the incubator is, the more students will benefit from an energized and dynamic movement of faculty, staff, and students whose driving motivation is to learn.”**

*David Brown, Divisional Dean of Social Sciences for the College of Arts & Sciences*

## RENEGOTIATION PROVIDES SAVINGS TO STUDENTS AND THE UNIVERSITY

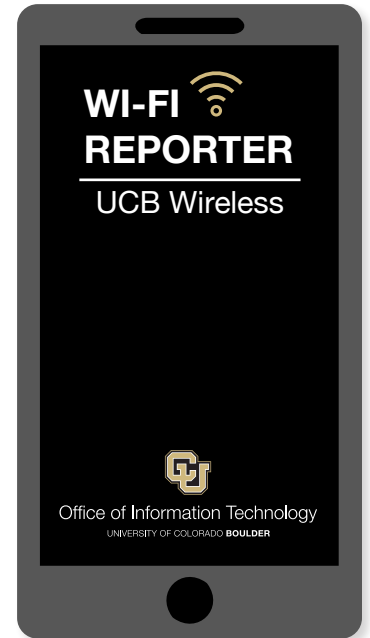
As part of the [Financial Futures initiative](#), our campus negotiated an enterprise license that significantly lowered the price of the Adobe Creative Cloud (CC) suite of software and provided Acrobat Pro at no cost to university owned computers. For the first time, students can purchase the suite of creative tools for digital imaging, design, web, and video, as well as online services including free storage for files, at the same reduced prices offered to faculty and staff. The price for Adobe Creative Cloud (CC) suite is now \$95 a year (\$65 for half year). That's a substantial savings compared to the previous annual cost of \$330 for students and \$240 for faculty and staff.

# TAKING CARE OF CORE CAMPUS FUNCTIONALITY: INVESTING IN WI-FI

Over the past two years, CU Boulder prioritized upgrading campus Wi-Fi networks and made significant investments to do so. Wi-Fi in eighteen buildings was upgraded and improvements to the campus networks continue to be made with ongoing incremental adjustments to maintain network health and improvements in Wi-Fi coverage in specific areas based upon campus feedback.

## Additional Way to Gather Data

Knowing where to upgrade is key for improving the Wi-Fi experience on campus. The UCB Wireless Quality Reporter app, developed this year, helps obtain that necessary data. This simple-to-use mobile app allows users to rate the performance of UCB Wireless by selecting if the Wi-Fi is bad, ok, or good in certain locations across campus. The data that comes from these anonymous reports is analyzed and helps identify specific areas for possible upgrades.



# MS TEAMS NOW AVAILABLE TO CAMPUS

This past academic year, Microsoft Office 365 Teams, a chat-based collaboration tool was made available to all CU Boulder affiliates. Backed by Office 365 advanced security and compliance capabilities, Microsoft Teams is a secure collaboration application that brings together people, conversations, and content so that users can easily collaborate to achieve more. It's naturally integrated with familiar Office applications and allows seamless collaboration on documents.

- Chat one-on-one or in groups
- Create channels to organize your conversations
- Seamlessly move from chat to an online meeting
- Schedule online meetings easily through Outlook
- Access to SharePoint and OneDrive for secure document storage and sharing
- Co-author Office documents within the app
- Manage projects and tasks using integrated tools such as Planner and Trello
- See a team member's current status
- Available across all platforms: desktop (Windows, Mac and Linux), mobile, and web browser.