2016 ANNUAL REPORT
Digital Classrooms Services
Table of Contents

Organization Chart ............................................................ 2
2016 Vision, Mission, & Values Statement ............................ 3
2016 At a Glance .............................................................. 5
2016 Accomplishments ..................................................... 7
2016 Issues & Challenges ................................................ 15
2017 Goals & Objectives .................................................. 15
Classroom Matrices .......................................................... 17
2016 Vision, Mission, & Values Statement

Vision Statement
All Rutgers University–New Brunswick students will be afforded the opportunity to learn in state-of-the-art, technology-enhanced instructional spaces that support a wide range of learning styles, and all Rutgers University–New Brunswick faculty will be provided with instructional technology and instructional support that enable them to effectively communicate and engage with their students.

Mission Statement
Digital Classroom Services (DCS) is committed to designing, creating, and supporting technology-enhanced learning environments. We design technology solutions that are at the forefront of emerging trends in classroom design and responsive to the unique needs of Rutgers University–New Brunswick faculty. We train faculty to use these tools, introduce them to new technology-aided teaching methods, and support the regular use of instructional technology.

Core Values

Excellence. Professionalism. Innovation
Excellence is our standard in all we do, from the classroom technology we offer to the training tools, daily support, and services we provide. To convey our dedication to our mission, we are committed to working collaboratively with fellow Rutgers staff and to building strong relationships with our faculty. We design new learning environments and teaching tools, and develop new methods of support to make Rutgers a leader in instructional technology. We collaborate with our colleagues at peer institutions to develop projects that leverage technology to meet the challenges facing higher education in the 21st Century.

Faculty Engagement
Beyond responding to requests for assistance, we proactively reach out to faculty to introduce them to new teaching tools and to learn about their instructional requirements. Rather than dictating instructional design, we work with faculty to ensure our solutions are responsive to their teaching needs.

Intuitive Universal Design
DCS technology is designed to create a consistent user experience (UX) so instructors will be equally familiar with the technology in all of our classrooms. We adhere to an intuitive, user friendly design aesthetic so that instructors can focus on teaching.

Excellent Customer Service
Rutgers University–New Brunswick is a large, complex institution. In order to help the community overcome the challenges involved in getting help at such a large university, we strive to provide excellent user support by being responsive and professional, and by providing status updates to our users. When we are not in a position to help, we connect users with other Rutgers resources that can.

Mentoring and Developing Student Workers
We work closely with our student workers to teach them to be conscientious, responsible, and attentive employees. We model a professional, nurturing, and rewarding workplace.

Smart Operating Practices
We continuously assess our operation to ensure that we are working effectively and efficiently, and that we are good stewards of University resources.
Learning Spaces*
(Changes since 2015 in parenthesis)

293  learning spaces supported by DCS (+39)

64  classrooms added to DCS since 2012 (+39)

Support

2,346  requests for support answered

235  equipment deliveries performed

269  faculty consultation sessions conducted

44  equipment loans provided

2016 By the Numbers

39  buildings across the Rutgers University–New Brunswick campuses (+3)

42  of these classrooms are brand-new learning spaces (+16)

*Updated through April 2017
Technology-Enhanced Classrooms

Classroom Renovation and Construction
DCS regularly researches, designs, and installs new instructional technology so Rutgers faculty and students have access to state-of-the-art teaching and learning tools. By being centrally involved in classroom design and construction, DCS is able to create a consistent user experience and evenly distribute instructional technology across the New Brunswick campuses.

Maintenance of Existing Technology
To ensure an exceptional experience for faculty in all our classrooms, DCS continuously maintains existing equipment through regular testing, maintenance, and repairs. Installed technology is regularly "refreshed" so that older equipment does not become outdated.

Providing Supplemental Instructional Technology
To accommodate the specific needs of instructors and to pilot new technology-aided teaching methods, instructors are also provided with supplemental technology that is not permanently available in DCS-supported spaces.

User Support

Daily User Support
DCS ensures that anyone using its equipment has access to responsive and knowledgeable support staff. Instructors needing immediate in-class assistance can contact the DCS Help Desk whenever classes are in session. The Help Desk assists instructors over the phone, often resolving issues by remotely logging into podium computers. When necessary, the Help Desk staff elevate issues to on-campus personnel, who provide in-person support in our learning space.

Additional Services
DCS support also includes several services that help faculty access supplementary technology for their courses, including equipment deliveries and semester-long equipment loans.

Faculty Training & Engagement

Outreach Events
DCS holds recurring technology demonstrations, conferences, and feedback sessions were faculty not only can learn more about instructional technology, but also help steer future advances at Rutgers.

Workshops
Regular workshops provide members of the Rutgers community with hands-on technology training and introduce them to new teaching tools.

Consultations
Instructional Technology Supervisors meet with instructors who seek a deeper level of engagement to help them develop pedagogic skills and create and implement solutions specifically tailored to their courses.

Online Training
At dcs.rutgers.edu, faculty can learn about instructional technology and other teaching and learning tools by watching instructional videos, using interactive tutorials, reading articles, and more.

2016 At a Glance

DCS Support Specialist Orientation

DCS Workshop

DCS Workshop
Technology
(Changes since 2015 in parenthesis)

97% of DCS-supported classrooms are equipped with data projection* (+4%)

211 Digital Classroom Systems have been installed since the project’s launch in 2012* (+71)

2016 By the Numbers

Outreach

144,763 visits to dcs.rutgers.edu (+24,681)

503 guests attended DCS events (+247)

21% increase in site traffic since 2015

*Updated through April 2017
2016 Accomplishments

2016 Classroom Upgrades

2016 marked year five of a multi-year effort to standardize Rutgers University–New Brunswick general purpose classrooms (GPC) with Digital Classroom Systems, a suite of presentation systems that provide a uniform user experience, while being tailored to meet the teaching needs of specific learning spaces. In 2016, we installed more new systems than any previous year: 71 Digital Classroom Systems were installed, including Digital Classroom Podiums, Digital Classroom Flip-Tops, and Collaborative Instructor Hubs—a version designed specifically for Rutgers’ newest active learning classrooms. 77 percent of all general purpose classrooms are now equipped with a Digital Classroom System.

Rutgers Academic Building

The Rutgers Academic Building on the College Avenue Campus (CAC) is the University’s new, signature academic building. DCS leadership was closely involved in the design of the building’s seventeen general purpose learning spaces. Seven seminar rooms equipped with Digital Classroom Flip-Tops provide much needed small classrooms for discussion-based courses. Two 120-seat and four 275-seat lecture halls help alleviate the scheduling strain on other University lecture halls and provide instructional technology specifically designed for these large spaces. The lecture halls are equipped with large screens that span the front of the rooms, allowing instructors to project high-definition, side-by-side images that can easily be viewed by students in the rear of the room. The screens are above the blackboards so
instructors can write at the same time as they project. Several podiums also include automated lighting and shade controls, so instructors can control everything in the room from one location. Construction of the Rutgers Academic Building also provided the opportunity to implement three new active learning spaces, which are designed to facilitate collaboration and interaction.

Active Learning

2016 was a seminal year for active learning at Rutgers. With the new active learning spaces in the Rutgers Academic Building and in Tillett Hall on the Livingston Campus, Rutgers University–New Brunswick now has four general purpose, active learning spaces. At the core of these rooms is an emphasis on learning that promotes problem-solving and collaborative engagement.

Three of these spaces are active learning classrooms modeled on MIT’s TEAL initiative (technology enabled active learning). Students sit in groups of nine at round tables with seats designed to allow them to easily move around the room into alternate configurations. The tables of nine enable students to work as one team or to break down into three triads. The tables are equipped with tablet whiteboards and wired and wireless connections, through which students can share material from their personal devices on group monitors. These rooms are also equipped with wall-to-wall and sliding whiteboards, where students can work through problems individually and collaboratively.

Instructors can facilitate group interactions from the center of the rooms at the Collaborative Instructor Hub. The "Hub" is the latest version of our Digital Classroom Sys-
system and is designed specifically for a collaborative environment. Consisting of two crescent shaped tables, it provides workspace, meeting space, and a host of technology. At the “student bar,” classmates or teaching assistants can pull up a stool to have a sidebar conversation with the instructor. On the other side, instructors can share content from a variety of sources and distribute them to any combination of the room’s monitors. Among the most exciting features of this room is the ability for the instructor to take material that the groups are sharing at their monitors and share it around the room. A common teaching practice utilizing this technology is to have students work in groups and then “report out,” as the instructor shares the group’s computer images to all the tables.

Construction of the Rutgers Academic Building also provided an opportunity to create an environment conducive to active learning in a large space. AB 4225 is our first Interactive Lecture Hall. This space holds 248 students and has the sightlines and tiered seating that allows for lecturing to a large group of students. However, every tier contains two rows of seats, and the front row can pivot 360 degrees, allowing students to form groups of two to five students so they can confer and do group work. The room is also equipped with Solstice wireless display sharing, allowing every student in the class to display his/her work to the entire lecture hall.
# 2016 Classroom Technology Upgrades

<table>
<thead>
<tr>
<th>Building/Division</th>
<th>Rooms/Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allison Road Classroom Building</td>
<td>108, 110, 203, 204, 205, 206, 207</td>
</tr>
<tr>
<td><strong>Beck Hall</strong></td>
<td><strong>Auditorium</strong></td>
</tr>
<tr>
<td><strong>Food Science</strong></td>
<td><strong>Auditorium, 101, 109</strong></td>
</tr>
<tr>
<td><strong>Frelinghuysen Hall</strong></td>
<td><strong>A1, A2, A3, A4, A5, A6, B1, B2, B3, B4, B5, B6</strong></td>
</tr>
<tr>
<td><strong>Hickman Hall</strong></td>
<td><strong>114, 129, 204, 207</strong></td>
</tr>
<tr>
<td><strong>Loree Hall</strong></td>
<td><strong>020, 022, 115</strong></td>
</tr>
<tr>
<td><strong>Lucy Stone Hall</strong></td>
<td><strong>B121, B123, B116</strong></td>
</tr>
<tr>
<td><strong>School of Communication &amp; Information</strong></td>
<td><strong>101, 103, 201, 203</strong></td>
</tr>
<tr>
<td><strong>Rutgers Academic Building</strong></td>
<td><strong>1170, 1180, 2100, 2125, 2150, 2160, 2200, 2225, 2250, 2400, 3100, 3200, 3450, 4225, 4400, 4450</strong></td>
</tr>
<tr>
<td><strong>Ruth Adams Building</strong></td>
<td><strong>104, 206</strong></td>
</tr>
<tr>
<td><strong>Tillett Hall</strong></td>
<td><strong>204</strong></td>
</tr>
<tr>
<td><strong>T. Alexander Pond Science &amp; Engineering Resources Center</strong></td>
<td><strong>202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 216, 217, 218, 220</strong></td>
</tr>
</tbody>
</table>

*new DCS classrooms*
Active Learning Community

Initiated in the fall of 2015, the Active Learning Community was formed when DCS contacted faculty who were already engaged in active learning and asked them to consult on the design of the proposed active learning rooms. In 2016, the community grew into a dynamic cohort of faculty and staff who use, or are interested in using, active learning techniques.

In May 2016, the Active Learning Community hosted its 2nd annual Active Learning Boot Camp, a day of talks, presentations, panels, and demonstrations focused around active learning. Dr. Robert Beichner from North Carolina State University—an active learning pioneer—presented the keynote address on the impact of active learning in higher education, and the group toured our first active learning classroom in Tillett Hall. The day also included presentations and panel discussions from Rutgers faculty who shared their experiences with active learning, as well as technology demonstrations and workshops.

Since then, the community has met monthly for workshops centered around different active learning topics. It has evolved into a forum for connecting members of the Rutgers community with ideas, resources, and—most importantly—other colleagues who are pursuing active learning. Membership has grown to nearly two hundred people, and it continues to grow as word spreads of the new active learning spaces and the community formed to support their use.

Active Learning Community Membership

- Arts & Sciences: 23.1%
- Communication & Information: 40%
- Engineering: 6.7%
- Environmental & Biological Sciences: 6.2%
- Social Work: 9.7%
- Other schools: 9.2%
- Institutes & non-academic units: 5.1%
Immersive Synchronous Lecture Halls

In Fall 2016, DCS—working with Institutional Planning and Operations and the Office of Information Technology—transformed Loree Hall 024 and Wright Lab Auditorium into Immersive Synchronous Lecture Halls. These state-of-the-art spaces enable instructors to teach students in two rooms simultaneously. The instructor and students in one room see students in the remote room on large projection screens and converse with them through an array of ceiling microphone. Similarly, students in the remote room interact with a life-size image of the instructor at the front of their room, while also seeing and hearing the students in the other location. Sightlines are designed to create the sense that the instructor and students are looking at one another, regardless of their campus location. The result is an immersive experience, designed to foster connection, conversation, and collaboration.

The immersive synchronous lecture hall (or “telepresence” lecture hall) connecting the Busch and Cook/Douglass campuses are part of the President’s and the Chancellor’s coordinated efforts to improve our students’ educational experience by reducing course-related student travel, keeping students on or close to their “home” campuses and moving ideas—professors and course material—to them. Though the students on the respec-
tive campuses are in the same classroom all semester—again, on or close to their “home” campuses—the professors alternate between the rooms on a regular schedule, giving both classes equal access to their professors.

The outlines of this project were first referenced in the University’s 2014 Strategic Plan, and the Physical Master Plan, Rutgers 2030, which was released the following year, provided further shape to the concept of technology enabled instruction to help address the geographical challenges on the New Brunswick/Piscataway campuses. Rutgers 2030 opens by succinctly highlighting a longstanding critical challenge, one that shapes the student experience in New Brunswick: “too many students spend too much time getting to, from, and between their classes.” A team from Rutgers worked for over a year refining concepts and collaborating with leading architects and technology integrators on a unique, custom design. The Immersive Synchronous Lecture Halls represent one piece of a coordinated plan to enable students to spend their time in class, rather than getting to class.

Early feedback and survey results indicate that these rooms are successfully offering a preferred alternative to traveling between campuses for class. Furthermore, our close engagement with faculty has resulted in a teaching experience enhanced through, rather than frustrated by, technology.
Learning Spaces Supported by the Office of the Chancellor

DCS assumed responsibility for supporting instructional technology in rooms that are not general purpose classrooms, but that are used for student education offered by units reporting to the Office of the Chancellor. These learning environments—including the Rutgers Learning Centers and the Kathleen W Ludwig Global Village Learning Center—offer opportunities to explore new, innovative approaches to space and technology design.

DCS Pilots

For the second year, DCS partnered with faculty to test and develop new classroom technologies through the DCS Pilots program. We introduce pilot technologies at our May DCS Showcase and then put them in the hands of Rutgers faculty over the course of the following academic year to determine their usefulness and viability in Rutgers classrooms.

CatchBox

CatchBox is a throwable, cushioned, cube-shaped microphone that can be tossed around a classroom without risk of breaking. It can be used to help facilitate participation in large classrooms by being tossed to students during question and answer sessions. It can also serve as a fun way to help moderate discussions in active learning classrooms by helping to identify who is currently “on the spot.”

DCS partnered with several faculty in the Fall of 2016 to learn more about CatchBox’s viability, and the pilot was enthusiastically received. Moving forward, the CatchBoxes will be a part of the equipment we offer regularly to faculty.

Poll Everywhere

Poll Everywhere is a student response system that is utilized through a student’s own mobile device. DCS became interested in it because of the dynamic way it displays results in real time and because its pricing model—which does not charge students—could enable us to incorporate the software into DCS classroom systems.

Poll Everywhere was very well received by the faculty who utilized it. DCS’s further involvement will be dependent on the University’s larger plans for student response systems.

Kaltura

In 2015, DCS worked with other units at Rutgers to procure a site-wide license for Kaltura lecture capture software. In 2016, we highlighted this solution as a pilot technology that faculty could use to easily record their audio, video, and computer presentations in class for use outside of class. By working closely with faculty, we have learned more about how instructors would like to preserve their class presentations, and we are using this knowledge to develop ways to streamline its use for future courses.
a result, we are in the process of providing the software to Princeton University so that they can pilot our technology in their classrooms.

Rutgers Academic Building Office
The new Rutgers Academic Building is home to our newest DCS office. This space, centrally located on the College Avenue Campus, includes two offices, a storage space, and a Help Desk area that provides the campus with an inviting location for faculty seeking support and assistance.

2016 Issues & Challenges

Event Support
Support for non-curricular events in general purpose was previously provided by Media Services, a unit that is no longer in operation. DCS began handling these requests formally filled by Media Services, providing support on an ad hoc basis. Though this function remains tangential to our core services, DCS is developing plans to scale its event support to best serve Rutgers and its external community.

2017 Goals & Objectives

Determining What 100% Looks Like
As we near our goal of equipping all general purpose classrooms with a version of the Digital Classroom System, we will continually assess how the systems that go in the rooms are designed and how they function. We will continuously improve the current versions of the system and develop alternatives so that every space has a system that reflects the type of teaching that occurs there and the value and importance Rutgers places on teaching and learning.

Developing a Network of Immersive Synchronous Lecture Halls
As we improve and support the use of our new Immersive Synchronous Lecture Halls, we will continue to explore the ways in which these spaces are used. We will develop ways for outside parties to connect with the rooms, enabling guest lecturers and remote participation. We will also research methods for capturing the video and audio feeds for future use. Finally, preparations are already underway to build additional rooms, creating a network of Immersive Synchronous Lecture Halls that will allow our students to connect with classes on the College Avenue and Livingston campuses in New Brunswick, with Rutgers campuses in Camden and Newark, and with our Big Ten peer institutions and beyond.
Continued Focus on Active Learning

As word of Rutgers University–New Brunswick’s new active learning spaces has spread, so has the demand for more rooms. DCS is developing plans to provide collaborative spaces on the Busch and Cook/Douglass campuses, so all students can enjoy equal access to these spaces. At the same time, we are continuing to refine the types of active learning classrooms we deploy by determining the configurations that are most in demand.

The success of our active learning spaces is determined by the quality of learning that occurs inside these spaces, not simply by the quality of the spaces. As we introduce more active learning rooms, we will continue to work with the Active Learning Community to provide opportunities for faculty to continuously develop their teaching, working both with the most motivated active learning faculty and with those who are more reluctant to transform their classes with active learning practices.

University-wide Video Conferencing and Lecture Capture Solutions

As we have worked with faculty to develop Kaltura as a software solution for lecture capture, we will explore ways of providing classrooms with dedicated lecture capture equipment so instructors can quickly and easily initiate recordings. DCS is leading a cross-departmental task force with OIT, NJMS, and the RBHS, Camden, and Newark campuses to develop a University-wide plan to develop a consistent video conferencing and synchronous communications platform. As much of this hardware can also provide video conferencing, we will also seek ways to develop dual-purpose rooms suitable for video conferencing and lecture capture.

Faculty Communities

The Active Learning Community and Immersive Synchronous Lecture Hall faculty group demonstrated the effectiveness of working with faculty in cohorts, and we will continue to explore other ways to use this model to work with faculty. Other initiatives, such as lecture capture, may provide additional opportunities to engage with sub-groups of faculty.

Event Support

To improve the support provided for non-curricular use of our general purpose classrooms, DCS hired a specialist who will provide dedicated support and who will be on site during special events.

Enhanced Support Tools

DCS’s Application Developer has created several back-end tools that staff use to monitor and troubleshoot issues with DCS systems. In 2017, we will expand these tools to include automated alerts for system failures and an online maintenance system that notifies and records when issues are found during routine system tests.