Rutgers IT

Information
technology
advancing the
university
mission

RUTGERS

Message from the Senior Vice President and Chief Information Officer
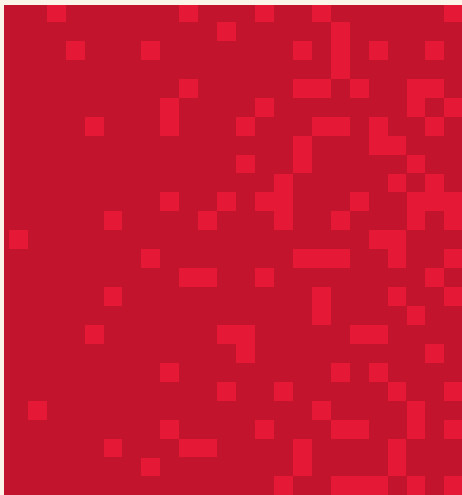
Michele L. Norin

Senior Vice President and
Chief Information Officer

Welcome to the inaugural annual review of information technology at Rutgers! One of my priorities since arriving here at Rutgers three years ago has been to create more awareness about the work of IT. This publication is a chance to do that—to highlight the impressive breadth and scope of our work in areas as diverse as high-performance research computing and videoconferencing solutions. The day-to-day work of securing our data centers, providing technical support, and delivering wireless connectivity does not always give us a chance to step back and take stock of our accomplishments.

IT services and support are provided by the enterprise-wide Office of Information Technology and by "distributed" IT staff at Rutgers schools, departments, and other units. For us to succeed, we must work together, and this annual review features the achievements of not just one IT office or department at Rutgers, but many. It also features the name Rutgers IT—our name for the university's IT community, resources, and services. We are partners, as Rutgers IT, collaborating not just on the everyday work of delivering efficient, reliable services and support, but also on a multitude of initiatives and projects to advance the university's missions of teaching, research, and service.

From the myRutgers portal (with one million logins per month) to the Rutgers network (with 24,000 miles of individual fibers), we are dedicated to delivering state-of-the-art technologies to support the vibrant life of this great university. We know we have work ahead of us, and we are moving forward on many fronts by streamlining services, adopting cloud-based technologies, and simplifying IT for faculty, students, and staff. Our priorities (available at cio.rutgers.edu/strategic-priorities) are far-reaching and ambitious, reflecting the essential role of information technology in helping Rutgers achieve new heights as a leading public research university. This has been a year of significant advances for Rutgers IT, and I am excited to share our progress in this 2017–2018 review.

Sincerely,

Michele L. Norin

Streamlining Tech Support

848-445-HELP

Need help with RUWireless, Scarlet-Mail, or countless other issues? Help Desk staff members are ready to provide tech support to the university community.

Unified Help Desk phone system

A single Help Desk phone system now in place delivers improved service. The single system enhances collaboration among Help Desk staff across locations and improves staff availability for calls. And callers benefit from time-saving consistent menus they find when they phone in.

Help Desk for faculty and staff

A cadre of full-time professional Help Desk staff is dedicated to handling calls from faculty and staff. And with after-hours 24/7 emergency support, the Rutgers community can feel more secure about getting the Help Desk service they need, when they need it.

Did you know?

The Office of Information Technology hires 250-plus students for tech support positions each year. The jobs are highly selective, and they provide stellar training, with alums working at Dropbox, Google, NASA, and other top tech employers.

Toll-free

Coming soon: One toll-free number for Help Desk support will provide a single point of contact for all locations.

You have questions

A sampling of just some of the queries fielded daily by Help Desk staff.

- How do I print from my laptop?
- Where do I view my transcript?
- How do I register my game system in my dorm room?
- I think I was phished. What do I do?
- How do I update my directory information?
- Can you help me set up RUWireless on my phone?
- How do I download Microsoft Office for home use?
- How do I reset my password?

OIT Help Desk

90,229 phone calls answered

6,881 walk-in support sessions

48,725 emails answered

99.85% satisfaction rating

Simplifying IT. Enhancing Ease of Use.

Pay my term bill, Mom?

Now students can provide permission for others to view and pay term bills, with other services on the way. CommunityID is a new type of Rutgers account for parents and others in the extended Rutgers community that provides access to features requiring a login.

Box file sharing and collaboration software

Rutgers selected Box for cloud-based storage, with the service due to roll out to the university in early 2019. Box's intuitive tools will foster collaboration and provide the necessary controls for security and compliance.

Libraries QuickSearch

QuickSearch, a new search service for the Rutgers University Libraries, delivers a single, easy-to-use interface for accessing Rutgers' vast library holdings.

One point of contact for IT at Rutgers University–Camden

All IT staff at Rutgers University–Camden have been combined into a single unit: Rutgers University–Camden IT. The goal? Streamlined services and support, a reduction in inefficiencies and duplication of services, and a single point of contact.

Maps, reimagined

The online campus maps, with new interactive features, make finding buildings, food, and parking fast and simple. Maps detail bicycle and bus routes, walking paths, and recreation and athletic fields.
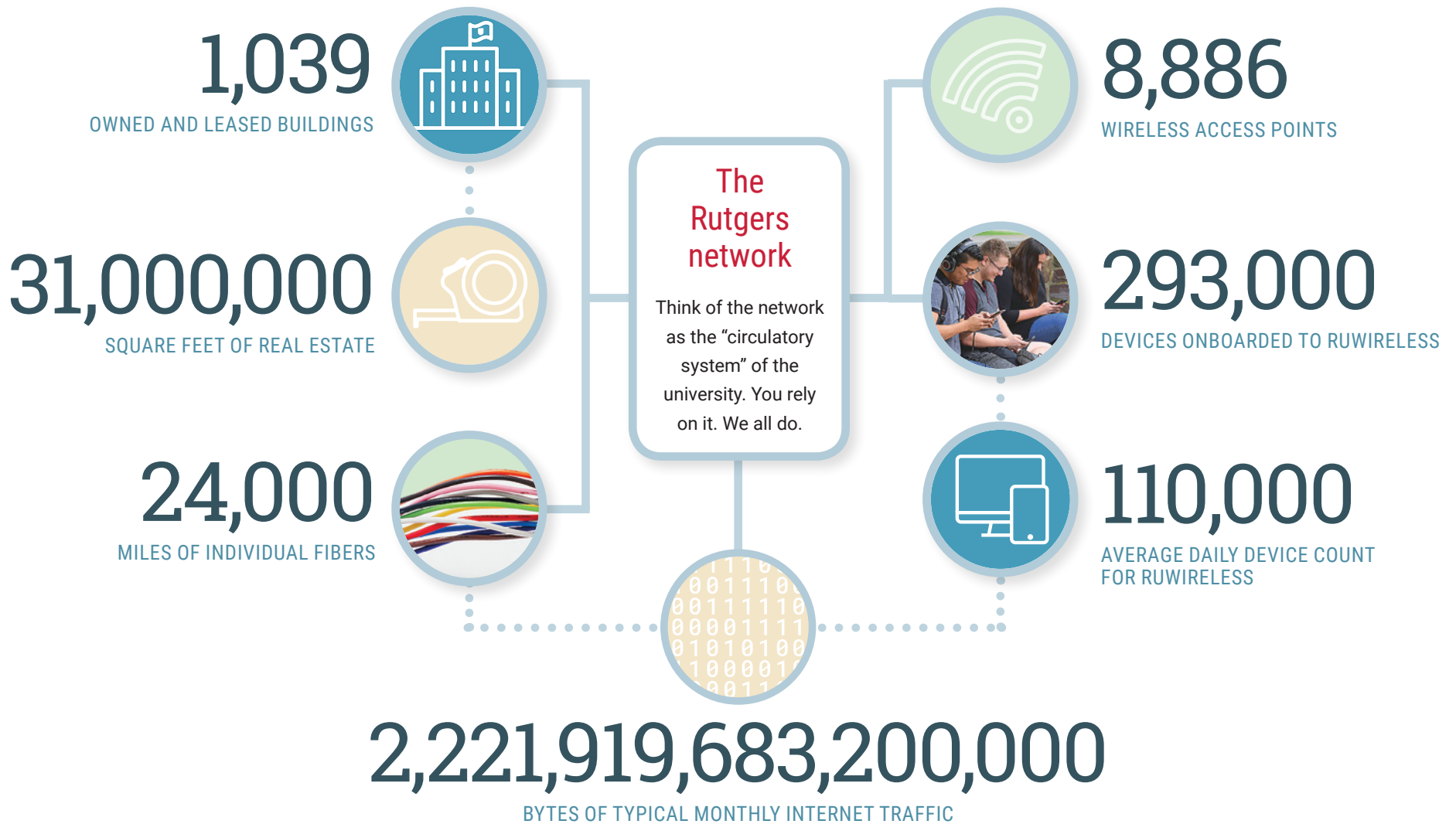
23,343

That's the number of centrally managed computers at Rutgers. Collaboration between OIT and unit computing staff provides

- a consistent computing environment
- improved security
- critical data to leverage universitywide purchasing opportunities

Fast Reliable Internet

1,039
OWNED AND LEASED BUILDINGS

31,000,000
SQUARE FEET OF REAL ESTATE

24,000
MILES OF INDIVIDUAL FIBERS

The Rutgers network

Think of the network as the "circulatory system" of the university. You rely on it. We all do.

8,886
WIRELESS ACCESS POINTS

293,000
DEVICES ONBOARDED TO RUWIRELESS

110,000
AVERAGE DAILY DEVICE COUNT FOR RUWIRELESS

2,221,919,683,200,000
BYTES OF TYPICAL MONTHLY INTERNET TRAFFIC

Security and Speed. For the Future.

Cisco Advanced Malware Protection (AMP)

- next-generation security product
- protects against malware, viruses, adware, and more
- enables Rutgers to prevent and contain cyber-threats before they have an impact on the university

10X faster

A new master plan for the Rutgers network charts a 10-year course toward a faster, more resilient Rutgers network, ubiquitous wireless connectivity, and a technology infrastructure designed for next-gen innovations in teaching, research, and service. The network "core"—the backbone of the network—would increase from 10 Gb/s to 100 Gb/s.
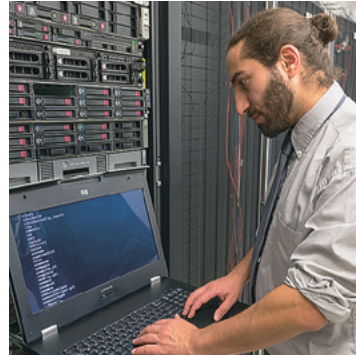
Teaming up for cybersecurity

Rutgers teamed up with other Big Ten universities as a founding member of a new cybersecurity operations center for higher education. OmniSOC is a pioneering initiative with the goal of helping higher education institutions reduce the time from first awareness of a cybersecurity threat anywhere to mitigation everywhere for members.

Top standards for health care security

The Health Information Trust Alliance, known as HiTrust, sets the top standards for health care data use and security, and Rutgers Biomedical and Health Sciences teams are taking key steps to standardize and improve security, develop policies and procedures, and align with the HiTrust security framework.
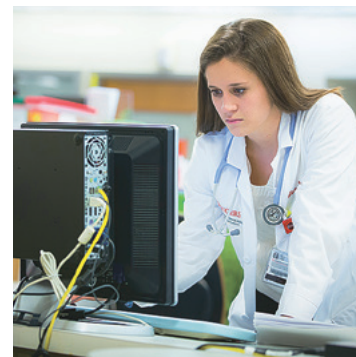
Password

+

Proof

Access

Two-step login

Sign up at twostep.rutgers.edu in order to

- protect your identity
- avoid compromised accounts
- gain extra security for your information

Security Stats

37,252
devices migrated to Cisco Advanced Malware Protection (AMP)

1,528,783
malicious network attacks blocked

36,036
security alerts triaged for investigation

90+
IT staff members from university units participated in computer security first-responder training

Workplace Evolution. Reducing Complexity.

Dashboard for health care IT

Technology leaders at Rutgers Biomedical and Health Sciences are using a collaborative, web-based dashboard to develop and share roadmaps about IT projects to ensure the efficient use of re-sources for academic, clinical, community health, research, and other IT needs.

Software volume discounts

A software licensing committee with representatives from across Rutgers is seeking to leverage Rutgers' purchasing power when buying software. A key goal? Coordinating licensing of the software purchased by disparate units. Benefits so far include discounts on Microsoft business analytics software, volume dis-counts for Adobe creative tools, and a universitywide license for Lynda.com.

DocuSign

DocuSign was selected as Rutgers' electronic signature system to replace paper-intensive processes with streamlined digital workflows and to reenvision conventional processes with secure, legally enforceable digital workflows for

- faster signatures, with documents automatically routed via email

- real-time tracking as documents make their way through the approval process

- reduced errors, with DocuSign helping to ensure documents are completed properly

Visualizing Rutgers data

Tableau software is being used to gain insights from Rutgers data and guide decision-making. Case in point: The Rutgers University Foundation and Rutgers University Alumni Association use its data visualization to measure, analyze, and increase alumni engagement and fundraising.

One phone system

The university is replacing four different phone systems with one unified, state-of-the-art system from Cisco. That means a unified directory, easier call transfers, and enhanced support.

Data and Documents

6 data centers
geographically dispersed data centers provide physical and virtual support for Rutgers' academic, clinical, research, and administrative communities

99.97%
data center availability

18 million
pages of documents processed through the ImageNow system, a secure, user-friendly imaging tool to capture and manage documents

$1 million
in savings since the 2017 launch of an initiative to set standards for computer purchases

Intuitive. Personalized. Self-Service.

Creating a culture of accessibility

- Conducted accessibility audit of university websites
- 50 websites remediated
- 100+ websites now include process for reporting barriers to accessibility
- 150 staff and faculty trained in workshops and webinars

Streamlined and personalized for students

Major enhancements to the myRutgers portal provide students with a streamlined digital experience through a mobile-friendly, personalized dashboard to key information such as course registration and schedules, grades, financial aid, and degree progress. Future enhancements will integrate links to learning management systems, housing, dining, career services, and more.

Next-gen ID cards

New Rutgers ID cards provide enhanced security and the ability for students and employees to submit a photo online.

myRUN simplifies Rutgers University–Newark for students

Finding answers isn't always easy. The solution? A single Rutgers University–Newark website, myRUN, categorizes, catalogs, and explains the services and resources available to Rutgers–Newark students.
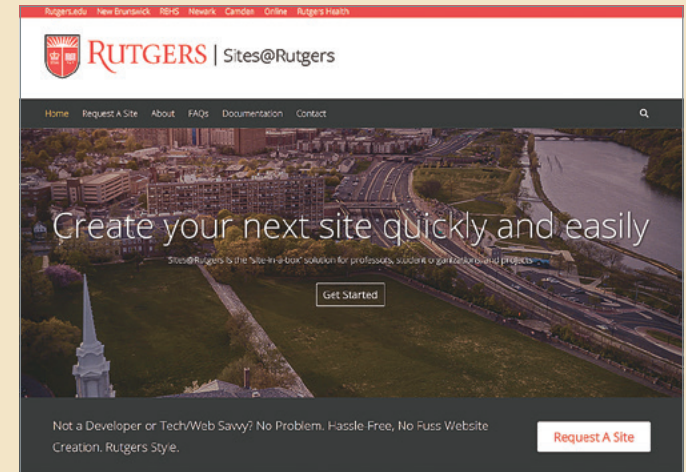
Website-in-a-box

Not a developer? No problem. Sites@Rutgers provides an easy-to-use tool to build a Rutgers website. Now professors, student organizations, and project teams can build their own feature-rich Rutgers websites. No experience necessary!

Big IT Stats

85,000 admissions applications processed

200,000 installs of the Rutgers mobile app

9 million logins per month to the Central Authentication Service (CAS)

1 million logins per month to the myRutgers portal

Next-Gen Tools. Email and Communications.

45,000
RUTGERS CONNECT ACCOUNTS

170,000
SCARLETMAIL ACCOUNTS

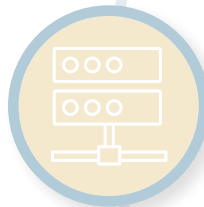**74** TB
EMAIL STORAGE IN
RUTGERS CONNECT

Cloud-based email and calendaring

Before Rutgers Connect, Rutgers had 100-plus email servers. Unified faculty and staff email and calendaring delivers enhanced security and saves an estimated $2 million per year. Students have been using a unified system, ScarletMail, since 2011.

350 TB
SCARLETAPPS STORAGE
FOR GOOGLE DRIVE,
EMAIL, AND PHOTOS

1 million+
RUTGERS CONNECT EMAIL
MESSAGES HANDLED PER DAY

900,000
DAILY EMAILS ON SCARLETMAIL

300,000
SPAM MESSAGES FLAGGED DAILY
IN RUTGERS CONNECT

Leveraging the Cloud

70

number of university websites hosted in the cloud with Pantheon

- out-of-the-box tools for developers
- hands-off configuration
- integrated support and maintenance

Your future is in the cloud

Our cloud computing strategy—developed by a mix of Rutgers IT professionals—includes enterprise agreements with Google Cloud Platform, Microsoft Azure, and Amazon Web Services. Advantages? No servers to maintain, no limits to capacity, and savings on maintenance, staff time, and equipment replacement.

Out front against service outages

The myRutgers portal and core identity management resources now employ cloud services to limit downtime and ensure high availability. It's available 24/7.

Portal for parking

A new cloud-hosted system handles parking permits, citations, and special events parking. The Virtual Parking Pass system eliminates the need for hangtags and paper tickets. It's convenient, paperless, and self-managed.

Rutgers is adopting an "opportunistic" cloud strategy by seeking to leverage the advantages of the cloud when refreshing technology or adopting new technology.

Next-Gen Meetings

1,095,937
minutes of Webex meetings

22,041
participants in Webex meetings

437,500
minutes of Skype meetings

500,000
peer-to-peer Skype connections (audio, video, instant-messaging)

One learning management system for Rutgers

Innovative. Cloud-based. Customizable. The university chose Canvas as its learning management system (LMS). Canvas is the leading choice among Rutgers' peer institutions. Key benefits include

- consolidating multiple learning management systems
- enhancing the teaching and learning environment for students and faculty
- fostering collaboration within and beyond Rutgers

More time in class, less on a bus

Telepresence video technology is bringing one professor to multiple locations, reducing travel time on university buses and preserving a real-time, immersive classroom experience.

Free video tutorials

With thousands of courses on topics such as web development, design, and presentations, Lynda.com is available for free to students, faculty, and staff. Among its uses are

- student career development
- integration into Rutgers courses
- staff training
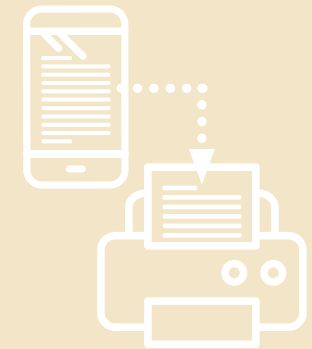
Print from your phone

Need to print on the go? You can now print from a phone or other mobile device, then pick up the document in a computer lab.

Word, PowerPoint, Excel. Cost? $0

The university now offers Microsoft Office for free to faculty, students, and staff.

Computer Labs

2.8 million
hours logged on computers in Office of Information Technology computer labs

1.98 million
logins at computer labs

35 million
sheets of paper printed in computer labs

12,538
trees saved from the university's PrintGreen Initiative since its start in 2007

The Amarel computing cluster is named after Saul Amarel, a renowned Rutgers professor and pioneer in artificial intelligence. Amarel's work bridged computer science and fields from ecology to medicine. His namesake computing cluster supports Rutgers research in such fields as climate change, galaxy formation, cancer drug treatments, and the neurobiology of autism.

New research computing cluster

The Office of Advanced Research Computing (OARC) launched Amarel, a new high-performance computing cluster for research computing. Amarel is a shared, community-owned advanced computing environment available to any Rutgers investigator or student with projects requiring research computing resources.

- **600** nodes
- **13,500** cores
- **52** NVIDIA GPUs
- **1,300** students, researchers, and faculty work on Amarel
- Equipment in Piscataway, Newark, and Camden

Intercollegiate collaboration

OARC is leading the Eastern Regional Network, a coalition of universities, network providers, and industry partners focused on research collaboration. The aim is breaking down barriers between universities and simplifying multicampus collaborations with transparent access to shared data and computing facilities. Partners include Google, Cisco, Syracuse University, and Brown University.

CPU hour usage is increasing dramatically for Amarel

Millions of CPU hours

- 2016: 17.65
- 2017: 34.91
- 2018: 50* *projected
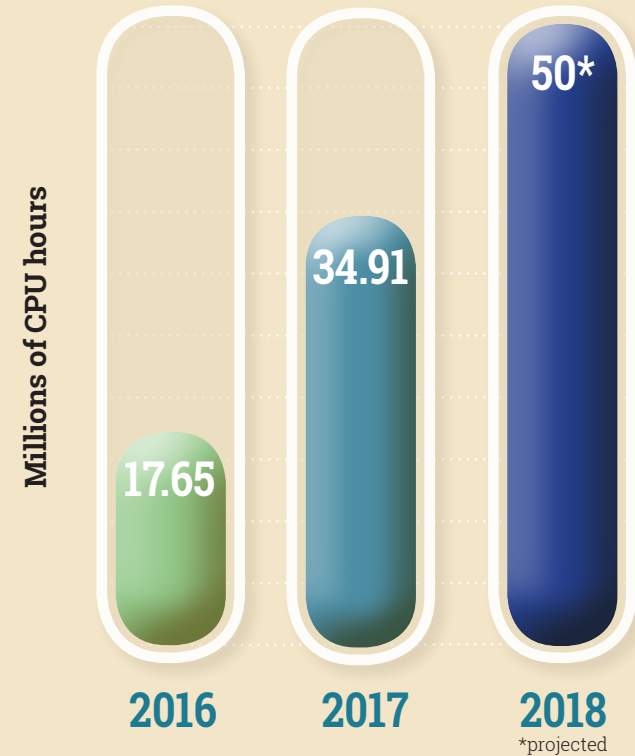
Research Stats

500 trillion
mathematical operations per second, peak performance—that's 500,000,000,000,000

175+
Rutgers departments, institutes, and organizations performing research on systems maintained by the Office of Advanced Research Computing

393
faculty, staff, and students from 53 departments have attended high-performance computing training since inception in 2017

$20 million
new research awards for Amarel-partnered projects since March 2016

Partnering. Collaborating. Unifying.

Working together as Rutgers IT

We're fostering a unified Rutgers IT community among the 1,000+ IT professionals working in the Office of Information Technology and distributed IT units in schools, administrative departments, and other areas. As a result, we are seeing

- more partnerships and relationships between OIT and distributed IT staff
- greater collaboration on initiatives and projects
- the fostering of a unified Rutgers IT community to provide comprehensive, coordinated service and support

Rutgers IT

Forum for IT leaders

More than 50 IT leaders meet monthly for the IT Leadership Council, a forum for information gathering, discussion, and collaboration. Ongoing collaborations bring together IT staff from OIT and distributed units on topics like these:

- cloud strategy
- software licensing
- communications
- videoconferencing and synchronous communications

Identifying and evaluating IT costs and services

Technology leaders from across the university are working with an outside firm with expertise in higher education IT to identify and evaluate IT costs and services at Rutgers. The goal? To determine costs for both distributed and enterprise IT and to provide recommendations on gaps and overlaps in service. IT leaders at Rutgers have already developed a high-level depiction of IT service at Rutgers, known as the IT Service Framework—a foundation for evaluating support, cost, and funding models for each IT service.

Developing IT Leaders for Rutgers

About 55 Rutgers IT professionals, from across university units and departments, participated in MOR Associates' IT Leaders Program, often working with peers from Penn State, University of Chicago, and other top universities.

EDUCAUSE

Senior VP and CIO Michele Norin chaired the program committee for the 2017 EDUCAUSE conference, the leading event for higher education IT.

B1G ACADEMIC ALLIANCE

Rutgers IT professionals are sharing and learning at Big Ten Academic Alliance groups and forums for computing infrastructure, identity management, and more.

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