



Approaching the Digital Horizon

Information Services 2018-2019 Annual Report

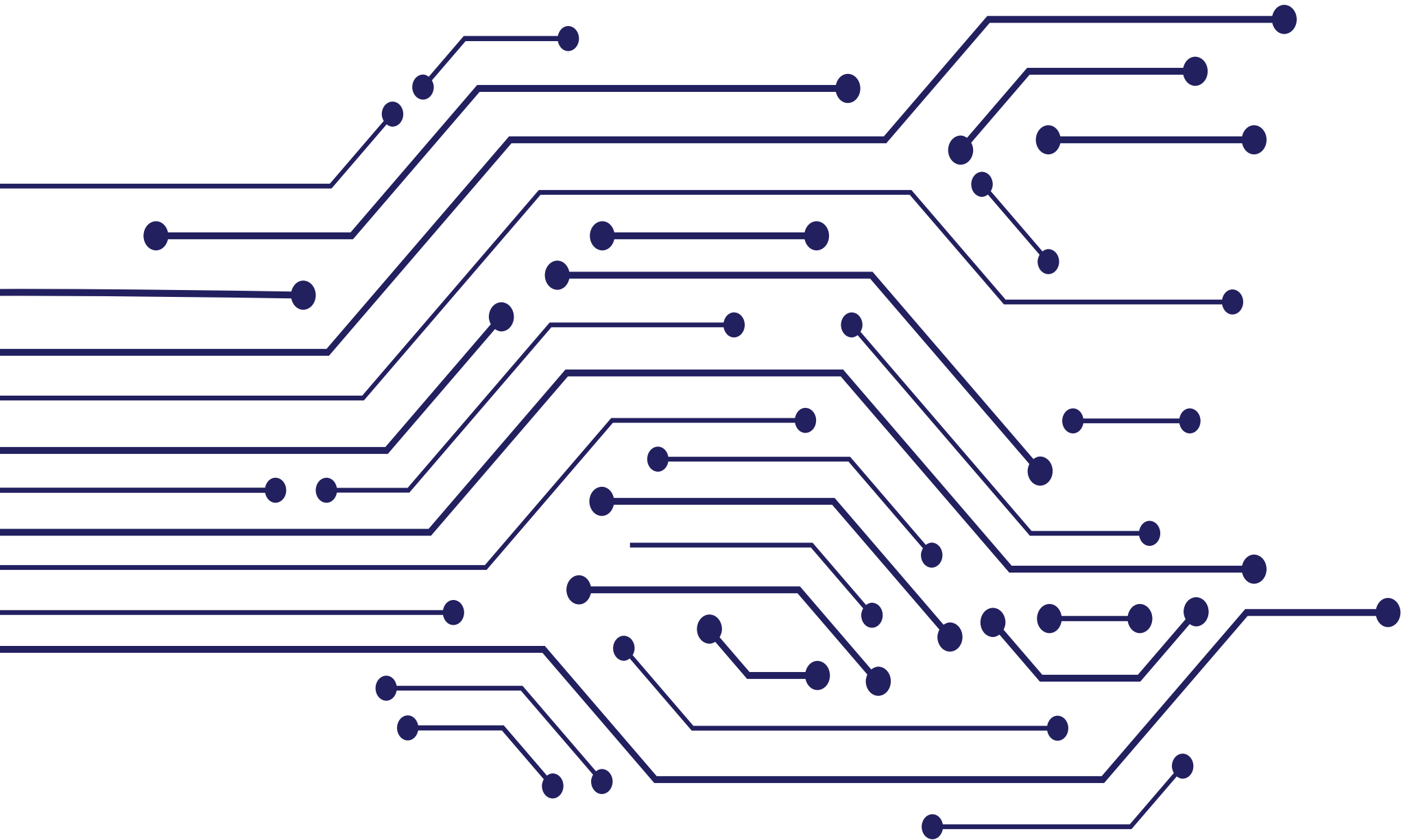


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About Information Services

The University has a large and complex information technology infrastructure which is managed by the Information Services (IS) division. Campus technology resources include telecommunications, email, wired and wireless networks, Web services, administrative and academic applications, identity management services, course management, library systems, high performance computing, digital scholarship, and information security. We also provide computing support for faculty, staff and students, as well as, public labs, research areas and classroom spaces.

IS works with the campus community to provide robust, reliable and secure information resources and services that enable faculty, staff and students to excel in their academic and administrative pursuits. Collaborating with other offices, we provide the facilities, equipment and professional support to assist faculty with meeting their teaching objectives as well as support for innovative uses of information technology to advance teaching, research and scholarship.

Mission Statement

Information Services partners with our campus community to provide effective and appropriate information technology and services to enable the University of Richmond's strategic, academic and administrative goals.

Vision

Faculty, students, and staff will harness modern technologies and robust information resources to enable teaching excellence, facilitate scholarship and innovation, promote student success, and facilitate responsible stewardship. The University will invest in the ability of students, faculty, and staff to use technology effectively, operate IT efficiently and protect the information of its community.



From the VP for Information Services and CIO

Welcome to the inaugural Information Services Annual Report. In this report, we review our accomplishments for the the 2018-2019 fiscal year. The report breaks down into three sections:

- **Strategic Contributions:** In this section, we outline some of the ways that Information Services has supported the goals of the University Strategic Plan. We start with Academic Excellence, and a look at the Technology Learning Center (TLC), which plays an increasingly stronger role in support of student and faculty technology use. We then look at how technology is being used to improve learning environments across campus. Next, we look at how the Intersections discussion group contributes to the University's Thriving and Inclusive Excellence goal. We wrap up the first section of the report by covering just some of the many projects that align with the goal of Stewardship in a Changing World.
- **Bridging the Digital Horizon:** In 2018, we launched the University Technology and Information Plan, a strategic plan for technology at the University of Richmond. The Technology Plan is aligned with the University Strategic Plan, with our first goal focusing on Teaching & Learning, including faculty scholarship and creativity. We then look at some of the ways we are preparing ourselves for the future through the implementation of Leading IT Management Practices.
- **People:** The purpose of technology is to help people accomplish their work more efficiently. In this section, we profile a member of the staff, Sybil Fellin, and how technology helps her support UR Better. We also profile Dr. Kelling Donald, in the Chemistry Department, looking at how he uses technology in his teaching and research. Finally, we list the staff, student staff, and strategic partners of Information Services. Our team and partners make technology at Richmond work to support the priorities of the institution.

It is not possible for us to list all of our accomplishments for 2018-2019 in the pages of one report, but I hope the report provides you with a sense of the breadth and quality of work we do to support Richmond's mission and goals. Now that we are in the 2019-2020 year, some of our work continues, but we also take on new efforts to improve how all members of the University community accomplish their goals.

Keith W. "Mac" McIntosh

Vice President for Information Services and CIO



Strategic Contributions

Academic Excellence

Technology Learning Center

Class Support

The Technology Learning Center (TLC), provides instructional technology support for classes throughout the year. For example, in May 2018, Mavis Brown (Education) collaborated with TLC staff to have her class create public service announcements for her Education in America First-Year Seminar. The TLC provided audio/video rooms and technical assistance for the production of the announcements, as well as a space for presentation. Mavis thanked the TLC especially for the presentation space and accompanying assistance, as her students appreciated the idea of listening and viewing fellow students' projects in a collaborative space.



EXPLORING AMERICAN MATHEMATICS

INTRODUCTION APPLIED MATHEMATICS COMMUNITIES IN MATHEMATICS
FUNDING FOR MATHEMATICS INTERNATIONAL ALLIANCES "TOWERING FIGURES"
WOMEN IN MATHEMATICS ABOUT

The first website of its kind to explore the people who create, institutions that support and cultures that influence mathematics. Click on a collaborative project above or individual project below.



Class Project

In March 2019, The Technology Learning Center (TLC) is mentioned in an article in the Collegian. In the article, entitled "UR mathematics students create website on the history of American math education," Professor Della Dumbaugh (Mathematics) describes a project in her Explorations in American Mathematics course in the Fall, where students created a website that uses stories and maps to tell the history of American mathematics. For example, one story tells The Migration of German Mathematics. Director of Academic Computing Services Mark Nichols is quoted in the Collegian article, "It was a great idea, a really interesting topic and a great collaboration between Della and her students and the technology of ArcGIS Online."

One Button Studio

In May 2018 the TLC completed the installation of a One Button Studio. The One Button Studio is a simplified video recording setup that can be used without any previous video production experience. The design of the studio allows you to create high-quality and polished video projects without having to know anything about lights and cameras. You only need to push a single button to start recording, then push the same button again to stop the recording. With this installation complete, we are using the lesson learned from this project to start planning a second installation in the Global Studio. Thanks to Academic Computing Specialist Melissa Foster, TLC Students, and TMSS for working to make this happen.



176 Posters

printed in

3 weeks

for the Arts & Sciences
Student Symposium

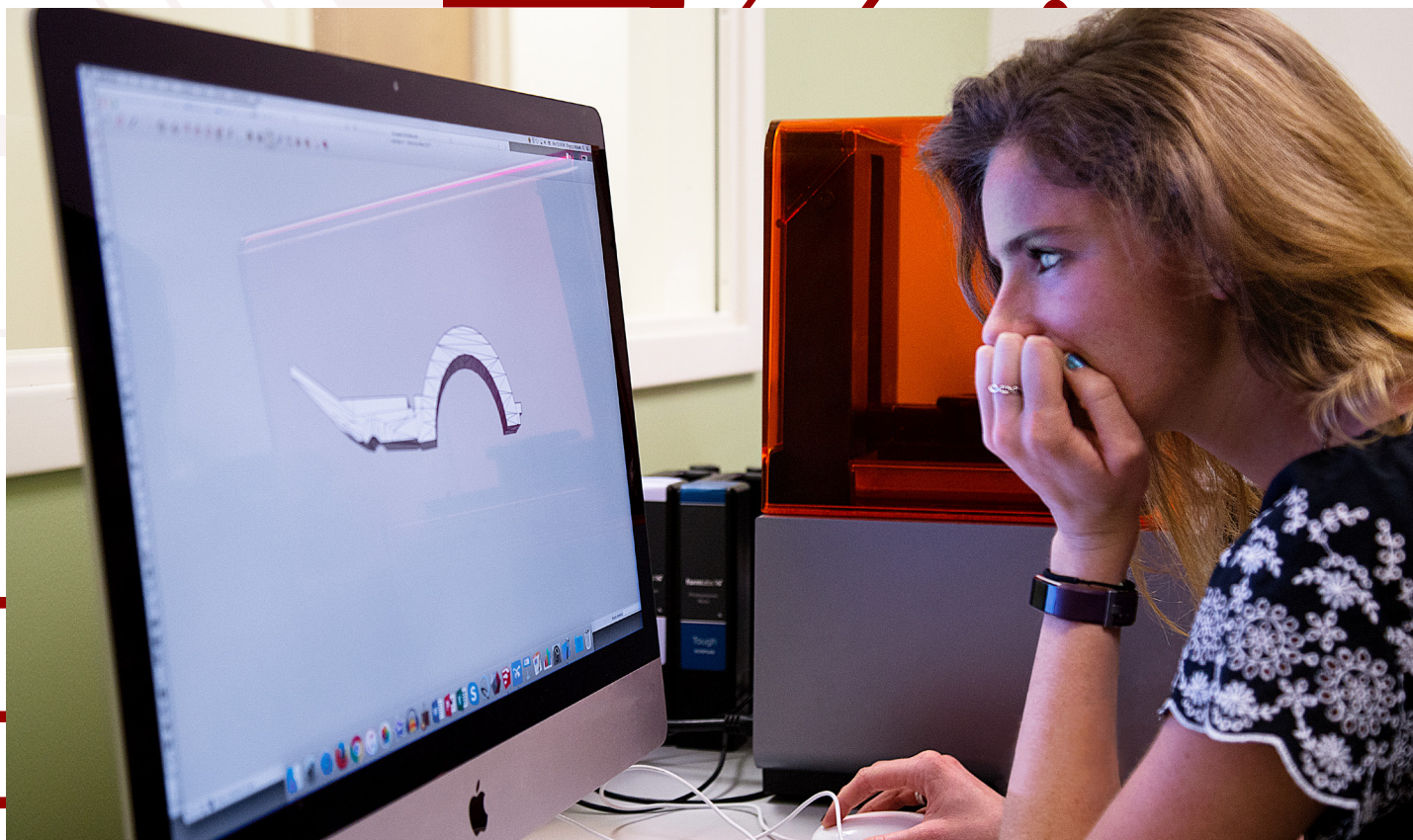


Faculty Technology Support

In June 2018, Jessica Chan (Chinese Studies) passed on the following note thanking Melissa and the TLC students: "I just want to let you know how much I appreciate your help in perfecting the images for my book publication. Attached is the book cover and image proofs (in color!). They look great! Many thanks to you and your student workers! - Jessica"

Student Research Support

In June 2018, summer research fellow Nicole Bialick came to the TLC for assistance in modeling and 3D printing a clamp. TLC Staff met with her to ensure the clamp met her exact specifications, which include exact size requirements, no metal parts, and sufficient durability and strength. Nicole's research, sponsored by Christine Helms (Physics), focuses on the elastic properties of nanofiber thread. These clamps, which were developed over several 3D printing iterations, will be used to hold the nanofiber wire in place throughout her experiments.



Strategic Contributions

Academic Excellence

Learning Spaces

Wireless Projection

In response to faculty feedback, Information Services has implemented wireless projection, also known as Solstice Pods, in dozens of classrooms across campus. Wireless projection allows faculty or students to project their computer, tablet, or smartphone in a classroom. The technology has also been set up in several conference rooms on campus, benefitting staff as well. In addition to simplifying the ability to project from your device, wireless projection allows for multiple devices to project at once, enabling group work.

Dr. Kathy Hoke, chair of Mathematics and Computer Science says, “Chip Hoke and I team-teach SMART Calculus. It is a 2-semester course—students take Calculus I in the fall and Calculus II in the spring. On some days, the students bring their data to class and work on the analysis and connection to calculus in lab groups. They project their data and analysis onto the boards and then Chip and I can see at a glance whether each group is on the right track, need help, etc. If we want to make a point to the whole class, we can focus everyone on one group’s work.”

Dr. Ben Broening, Associate Dean of Arts and Sciences and professor of Music says, “We use the Solstice pods in the Music Technology Lab. I use them to share application windows in my computer with class and to share student screens with the class when

we’re reviewing student solutions. I’ve also used them in one-on-one sessions with students and tutorials so I can show how to do something while they still have control of their computer and can follow the steps I am taking. I really like it – fast to setup and flexible.”

Dr. Kristine Nolin, associate professor of Chemistry, agrees. “Love the flexibility of the wireless projectors! In Gottwald A-201, we have six projectors, which is fabulous for small group work.”

A list of classrooms with wireless projection capabilities is available on the Classroom Master Plan website. Assistant Vice President for Telecommunications, Media Support, User Services, and Academic Computing Services Doug West says, “As we look forward to 2019 project commitments, we would expect to deploy pods in all of the classrooms and



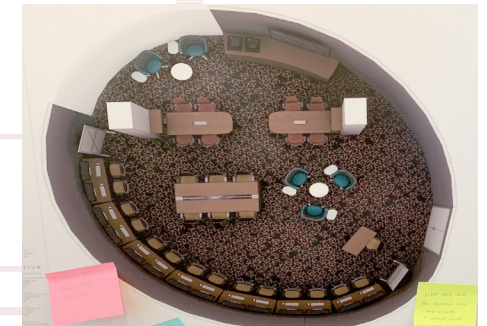
meeting rooms that are part of planned renovations, and the TMSS group will continue to include new pods in their classroom technology refresh projects. Current plans include the installation of the wireless pods in all classrooms in the Carol Weinstein International Center over spring break, and the Law School classrooms over the summer.”

West adds, “It is also important that the rollout of wireless presentation solutions in our classroom spaces is intended to be an augment to existing wired solutions. We will continue to provide a wired digital input for those users that wish to connect directly to the video distribution equipment with their HDMI cord or adapter. The Solstice Pod has certainly emerged as a very popular option for sharing presentation/content, but the wired connection will remain for the

foreseeable future.”

Gottwald E100 Open House

In March 2019, the Classroom Committee hosted an open house in Gottwald E-100 (the “Fishbowl”). Over the summer the room was renovated to become a computer lab (Gottwald A-100 is becoming a classroom). Three different designs were on display, and Creative brought furniture and VR renditions of the room designs. Dozens of faculty and students stopped by and made comments on the proposed room designs. The committee will take this input and use it to refine the renovation plans for the space.



Booker Hall Renovation

The renovation work in Booker Hall was completed in August 2018. Behind the scenes of all the beautiful renovations, much of the technology in the building was upgraded, from the infrastructure delivery, to the network connectivity, to the classroom technology, and the new A/V technologies installed in the state-of-the-art music lab, as well as individual faculty offices.



whiteboard, the side walls of the room are covered by 8' high whiteboards. On each of these two walls there are three short-throw interactive projectors. Instructors can control all seven projectors, or they can allow the six short throw projectors to be used wirelessly by collaborating students.

Faculty using the classroom seem to prefer two seating configurations for the room. The first is to set all the student tables into a U shape around the perimeter of the classroom. This format leaves the center of the room open, and is ideal for lectures or full-class discussions. The second configuration is to turn the tables into six groups of two tables. Each table seats two students, so the four students can work together at each of the six table groups. This format facilitates student workgroups. The room is equipped with a laptop cart, so that each of the 24 students in the room can

work on a computer as needed. Each of the students can wirelessly project to one of the six short-throw projectors, allowing multiple screens to be simultaneously shared as the students do their work.

The room, which was a collaboration between the Classroom Committee, Facilities, Information Services, and the Mathematics and Computer Science department faculty, has all-new carpeting and new lighting. In addition, there is a power grid in the ceiling, which allows for power to support any room configuration.

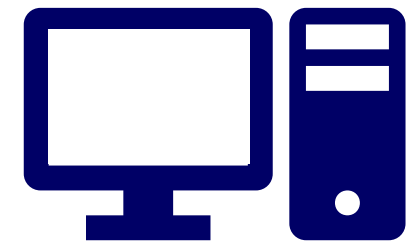
At the end of the Fall 2018 semester, the Classroom Committee surveyed faculty and students to see how effective the renovation had been. One faculty member commented, "A very positive experience. Welcome teaching environment, easy to set up the classroom, lots of flexibility, warm appearance. The technology was

challenging at times, but again that's more about me than the classroom." Another said, "I make frequent use of main projection throughout the room, frequent use of the expanse of whiteboard space (both during lecturing and for student breakout work), and occasional use of the ability for students to project individually via short-throw projectors. This classroom was a great place for me to teach."

Classroom Spotlight: Jepson G24

Every summer, the Classroom Committee updates classrooms across campus. In Summer 2018, the committee took two learning spaces and combined them into one. Jepson G24A and G24B were merged into an all-new classroom, Jepson G24. It's now an active learning classroom that supports a variety of lecture styles while also being flexible to facilitate group work.

When you walk into the classroom, you can immediately sense that it is a different kind of learning space compared to other classrooms on campus. While the front of the classroom has projection and a



Updating the Classroom Environment

In Summer 2018, Academic Computing Services replaced

247

classroom computers and updated the remaining

849

classroom computers to be ready for the Fall semester.

Strategic Contributions

Thriving & Inclusive Community

Intersections



Our Journey

On August 30, 2017, a group of Information Services (IS) staff got together to discuss the Unite the Right rally that had taken place in Charlottesville on August 11 and 12. Several members of the IS staff had been having hallway and office discussions about the rally and the tragic events surrounding the event. Keith W. "Mac" McIntosh, Vice President for Information Services and CIO, convened weekly "Race and Racism" discussions.

In the first meeting, the group developed ground rules for how they would communicate with each other with respect. The group decided to limit attendance to Information Services staff only, for reasons of privacy, trust, and familiarity. Attendance has always been optional, but a core group of about a dozen participants gathers weekly in the Whitehurst Living Room on Wednesdays from noon - 1:00 PM.

Since those first meetings, the group has moved on to discuss essays like "Getting Comfortable with the Uncomfortable," by Dr. Belisa Gonzales, and books including *Overcoming Bias*, *Why Are All the Black Kids Sitting Together in the Cafeteria?*, and *What If I Say the Wrong Thing?* Guest speakers have held discussions with the group, including Dr. Laurantette Lee, Dr. Thad Williamson, Dr. Ed Ayers, Dr. Glynn Hughes, and Dr. Beverly Daniel Tatum. The group has watched and discussed the movies "Crash" and "Dawnland." Most notably, the group has broadened its conversations beyond race & racism to include other "-isms" that impact the University, our country, and the world. The group is now known as Intersections, and it is open to all members of the University community.

Andrea Zinski, Senior Programmer Analyst, said, "I'm learning more about myself and understanding my own white privilege and biases through these group discussions, books and movies. The year 2016 was a pivotal year for how my lens of the world was changed. Charlottesville and politics opened my eyes to issues that I thought were things of the past and initially motivated me to come to these group conversations on racism. We've since covered a whole myriad of engaging and thought-provoking topics and current events provide even more subject matter to discuss...I feel we have the same goal, we all want to be better people and change the world - starting with ourselves."

In February, members of the group spoke at a lunch sponsored by the President's Advisory Committee for Making Excellence Inclusive and

Rules of Engagement

- Vegas Rules – Stories shared are to be kept private
- Respect Everyone – No personal attacks
- Reserve Judgement
- Listen to understand, not to respond
- Let others complete their thoughts before responding
- Allow for and ask questions
- Let people know if something offends you using "I" and "me" statements
- Crawl, Walk, Run

Information Services. The goal of the lunch was to share their experiences and to encourage the formation of other similar groups on campus, for those who can't attend Wednesdays at noon. Interested individuals have reached out from Advancement and student government associations.

The group meets every Wednesday in the Whitehurst Living Room from 12:00-1:00. All members of the University community are welcome to participate.

Dr. Rosa Atkins Meets with Intersections

On Wednesday, January 30, Dr. Rosa Atkins, Superintendent of Charlottesville Schools, spoke about the Unite the Right protests and their aftermath in Charlottesville. Senior Web Programmer Althea McMillan said, “Right off the top I was little surprised that Dr. Atkins would take time out of her busy schedule to meet with us. Now, after meeting her and having the honor (and really mean it was an honor) to visit with her yesterday, I see that she is passionate about what she does and deeply cares about her staff and the youth they are guiding and teaching. If you have read her bio you will see that she has received many accolades. I can simply say in regards to her: ‘I’m a fan’.”

Andrea Zinski said, “Although I spent a great deal of time researching my Unite the Right presentation for the group, I found having Dr. Atkins’ local and personal perspectives invaluable. I enjoyed hearing her assert that even though Charlottesville was the epicenter of hate during the summer of 2017, it’s still a great city filled with good people determined NOT to be defined by its history. “Furthermore, I was happy to hear that her office and other officials took special care to ensure that faculty and students had an opportunity to process what transpired before launching into the new school year. That was an important decision for the health and healing of the community. Her demanding job was made even more challenging after the fatal weekend of August 12th; however, she led with her heart and the Charlottesville City School System was fortunate to have her as their Superintendent as they faced the crisis together.”



Select Intersections Discussion Topics 2017-2019

- Review “Rules of Engagement and Terms of Racial Justice: Biological Race” (Dr. April Hill, Biology)
- Guest Speaker: Dr. Laurant Lee, “Intersectional Identities: Race, Gender, Class, and Regionality”
- How Structural Racism Works (Dr. Patricia Rose)
- Guest Speaker: Dr. Thad Williamson, “Parallel Tracks: Racial Gaps in Marriage, Employment, Wealth,” “Building Community Wealth in Richmond” and “RVA Education Compact”
- Guest Speaker: Dr. Ed Ayers on the Virginia’s History with Slavery and Southern Reconstruction
- Colin Kaepernick’s Take a Knee Movement
- Mapping Police Violence project
- Guest Speaker: Dr. Rosa Atkins, Superintendent of Charlottesville Schools - Charlottesville
- VA Gov. Ralph Northam, Lt. Gov. Justin Fairfax and Attorney General Mark Herring
- Guest Speaker: Dr. Irina Rogova - “Archives and White Supremacy”
- Southern Border Immigration
- Code Switching

Intersections Books

- *Overcoming Bias* by Tiffany Jana and Matthew Freeman
- *Why Are All the Black Kids Sitting Together in the Cafeteria?* by Beverly Daniel Tatum
- *What If I Say the Wrong Thing? 25 Habits for Culturally Effective People* by Verna A. Myers


Intersections Films

- Crash
- Dawnland

Strategic Contributions

Stewardship in a Changing World

Maintaining a Healthy Infrastructure



for off-campus access to BannerWeb

**Stop hackers
in their tracks.**

Duo day is coming.
February 5, 2019

Two-Factor Authentication Increases Security

On October 1, 2018, Information Services turned on Duo two-factor authentication for our virtual private network (VPN). In the past, individuals used only their NetID and password to connect to the VPN. Two-factor authentication (2FA) strengthens security by requiring two factors to verify your identity, such as something you know (NetID/password) plus something you have (mobile app/fob). Using the free Duo Mobile smartphone app (for iOS, Android) is the simplest and preferred method for obtaining the second-factor codes. An alternative is to purchase a Duo key fob at the UR SpiderShop.

To prepare the University community for Duo, IS undertook a communications campaign that included several pop-up desks to help students, faculty, and staff enroll in Duo at locations all around campus. IS also worked with the Law School, whose students rely heavily on the VPN to access Law library resources. The rollout of Duo for VPN on October 1 was successful.

As a second step, Information Services began requiring Duo for off-campus access to BannerWeb on February 5, 2019. This implementation affected undergraduate students more significantly than the Duo for VPN project. Again, IS used many communication channels to create student awareness and encourage Duo enrollment. As with the VPN implementation, the February Duo for off-campus BannerWeb access project was a success, with no reported problems when thousands of students pre-registered for Fall term classes.

Telephone System Upgrade

The TMSS group completed “phase 2” of the telecommunications system upgrade project in August 2018. The upgrade work consisted of the refresh of existing server hardware, and the upgrade of the system software to the latest version of the Avaya Aura Communications platform. In addition, the team updated the Automatic Call Distribution system, installed a new backup server in Jepson Hall (giving us a diverse routing backup capability that we have not previously had) and implemented the new integrated voice mail capability, to replace the old Audix system installed in 1993. The weekend work was the culmination of a 2 year planning effort. A lot of IS team members contributed to the success of the project, but special thanks go to Beth Simms in the Project

Management office, and Mike Scioscia and Greg Miller with the Network Team. TMSS did a great job of planning for and ultimately implementing the upgrade; the effort was led by Pam Harper and Phil Sherman, and included major contributions from Karl Schmitz, Chris Kelley, and our business partners Meridian (Brian Stevenson) and Epitome (Scott Pega).

28,382
Help Desk tickets in 2018



E-Waste Recycling

On November 5th, and 6th, representatives from Smart Metals Recycling were on campus to pick up electronics waste that had been accumulating since mid-summer. In addition to picking up old computer systems and associated peripherals, this event also included old data center equipment, older audio-visual systems, and equipment from the Campus Services office, including old cash registers, printers, keyboards, and monitors. E-Waste items designated for destruction were sent to North Carolina for processing, and items designated for refurbishment, and ultimately resale, were shipped directly to the Smart Metals facility in California. Smart Metals returned in April 2019 to take away more old University technology assets for recycling.

IT Performance Management

The IT Performance Management team (Troy Boroughs, Pam Harper, Eric Palmer, Fess Khan, Doug West, Lennie Rimmer, Ray Cargill, Jason Cope, Bob Littlepage, and Bill Galaspie) met several times and has successfully concluded its mission. A new performance management process has been reviewed both by IS leadership and the Skip-Level group and was officially adopted by the IS division as of 12/01/2018.

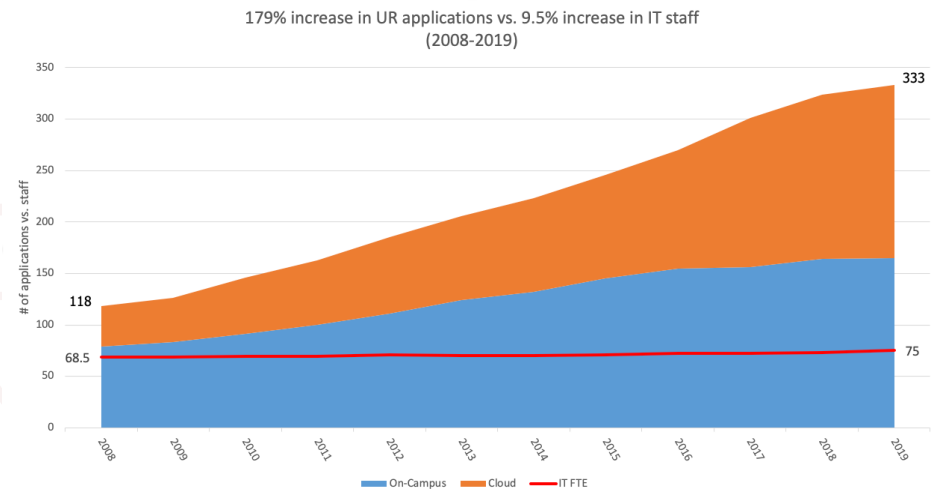
At the beginning of the review year (April), IS Leadership uploads the division or group's collective goals into TalentWeb as a single document for all employees (not tailored to any specific individual). At the end of the review year, managers enter only the final rating (Does Not Meet/Meets/Exceeds) into TalentWeb for each employee, with the monthly performance management discussions documented in Box.

Managers meet with each of their direct employees at least monthly and document monthly conversations in a Box note (to which the manager and their employee both have access). They discuss progress on annual goals; discuss training/development/growth activities; discuss/document expectations and agreement on what it takes to meet/exceed -- at the beginning of the review year -- making adjustments throughout the year if needed; discuss "hot" items (projects/initiatives that have the greatest priority at that moment) as well as recommendations to overcome obstacles, increase success, etc. Both manager and employee can edit the Box note and include items/comments (before/during/after scheduled discussions). A "mid-year" and "end-of-year" review is no longer required because discussions are happening monthly, maximizing understanding and minimizing surprises on both sides.

Outcomes and improvements expected of the new process include increased value of the process within IS--for both employees and managers; disconnecting pay conversations from planning/performance conversations; ensuring consistency/clarity of interactions and expectations between managers/employees; and increasing efficiency of this process within the IS division (by eliminating the end-of-year-report and focusing on on-going discussions).

Capital Projects 2018-2019

- Booker Hall
- Visual Arts Building (July 2019)
- Keller Hall Residential
- Sarah Brunet Hall
- Robins Center: Sports Medicine & Football
- Lacrosse
- Jepson Hall 120 Suite
- Law School Library
- Facilities Office
- Maryland Hall Ground Floor



Managing a Growing Workload

In eleven years, server-based software applications have grown 179%, compared to a 9.5% growth in IS FTE.

Cyber Liability Insurance

Information Services and Risk Management evaluated the need and benefit of adding cyber liability insurance as a line of coverage to the University's portfolio for several months. In March 2019, Keith W. McIntosh, Shana Sumpter, and Keesha Trim traveled to NYC to meet with several cyber insurance carriers to review and evaluate their cyber liability offerings. The team met with five major carriers over the course of a day to share the University's needs and understand each carrier's coverage and capabilities. The team narrowed the list down to two carriers and selected the one with the best post-breach services, which is where the coverage is most valuable. UR bound coverage on April 1 and now has access to experts who specialize in cyber incident response plus offer a number of preventative resources.

Baker / Tilley Audit

Our Internal Audit department recently selected the Baker/Tilley Audit firm to conduct IT assessments and audits over the next 5+ years. These future IT audits will go beyond our traditional KPMG Banner audits and will consider "everything" including campus-hosted and cloud-hosted applications, processes, data, organizational structure, policies, etc.: 1) IT Governance 2) Organization and management of IT operations 3) Local area network infrastructure 4) Application development and maintenance 5) Database administration 6) Computer operations and disaster recovery 7) IT application, network and infrastructure security and access 8) Servers, storage, and backup environments 9) Externally hosted software platforms and/or data 10) Telecommunications 11) Access Control 12) Interfaces.

Bridging the Digital Horizon

University Information Technology & Information Plan

Introduction

The University Technology and Information Plan kicked off in the fall of 2018. The IT strategic plan is linked to the University Strategic Plan, with each of its four goals aligning to one or more of the University's strategic goals.

The vision of the plan is: "Faculty, students, and staff will harness modern technologies and robust information resources to enable teaching excellence, facilitate scholarship and innovation, promote student success, and facilitate responsible stewardship. The University will invest in the ability of students, faculty and staff to use technology effectively, operate IT efficiently and protect the information security of its community."

The four goals align with the goals of the University strategic plan. Goal one, which aligns with the Academic Excellence strategic plan goal, is to **Support effective and innovative teaching and learning with technology.**

Goal two, which aligns with Academic Excellence and a Thriving and Inclusive Community is to **Provide digital tools and information to help students develop effective academic plans and to deepen their co-curricular engagement.**

Goal three, which is to **Enable faculty, student, and administrative support services that are efficient and data driven,** aligns with the Stewardship goal of the University strategic plan.

Also aligned with the Stewardship goal is the IT plan's fourth goal, to **Adopt leading IT management practices and develop organizational competencies to effectively and securely use technologies.**

Each of the four goals has a number of initiatives associated with it. Information Services is approaching these initiatives in three phases between 2018 and 2023. The first phase, which began in the fall of 2018, includes the following initiatives:

- 1.5 Expand research and scholarly computing support services including consultation, high performance computing and access to research software.
- 3.1 Support redesigned processes with digital workflows, electronic signatures, and document management capabilities.
- 4.1 Implement IT governance.
- 4.2 Adopt IT Service Management methods and a service management software application across IS.
- 4.3 Create an IS-wide project management office and adopt consistent tools and practices for resource planning and project management.
- 4.4 Maintain up to date business continuity strategy and disaster recovery plan in alignment with institutional priorities
- 4.5 Develop a comprehensive security strategy and security awareness program

Work on all these initiatives will continue into the 2020 calendar year, when the second phase of initiatives will kick off. The third phase is scheduled to begin in May of 2021.

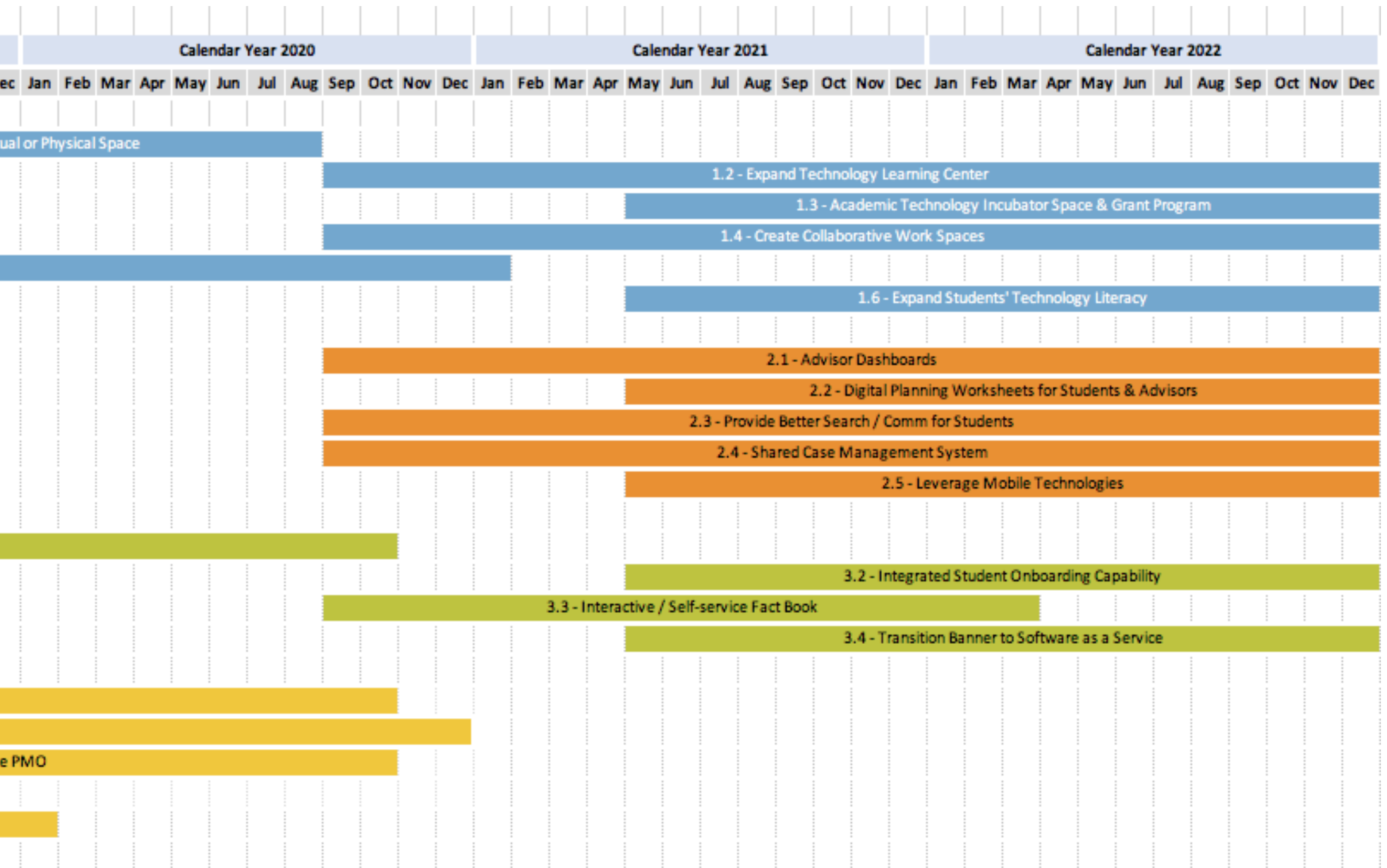
A website has been launched to track the progress of all of the strategic plan initiatives (<https://techplan.richmond.edu/>). Information Services will continue to update the website as we continue to work on the University's first IT strategic plan.



Bridging the Digital Horizon: Initiative Timeline

IS Strategic Planning

Strategic Initiative	Calendar Year 2018												Calendar Year 2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 - Teaching and Learning																								
1.1 - Create Common Virtual or Physical Space																								
1.2 - Expand Technology Learning Center																								
1.3 - Academic Technology Incubator Space & Grant Program																								
1.4 - Create Collaborative Work Spaces																								
1.5 - Expand Research Scholarly Support																								
1.6 - Expand Students' Technology Literacy																								
2 - Digital Tools																								
2.1 - Advisor Dashboards																								
2.2 - Digital Planning Worksheets for Students & Advisors																								
2.3 - Provide Better Search / Comm for Students																								
2.4 - Shared Case Mgmt System																								
2.5 - Leverage Mobile Technologies																								
3 - Support Services																								
3.1 - Support Redesigned Processes (UR Better)																								
3.2 - Integrated Student Onboarding Capability																								
3.3 - Interactive/ Self-service Fact Book																								
3.4 - Transition Banner to Software as a Service																								
4 - Leading IT Management Practices																								
4.1 - IT Governance																								
4.2 - IT Service Management																								
4.3 - IS Wide Project Management Office																								
4.4 - Business Continuity / Disaster Recovery																								
4.5 - Cyber Security Awareness																								
4.6 - Strengthen/ Expand Org Capabilities																								



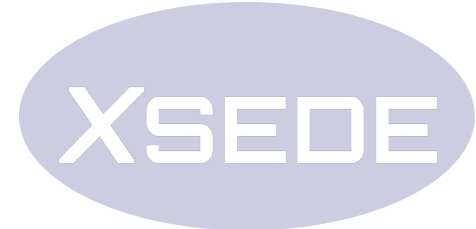




Bridging the Digital Horizon

University Information Technology & Information Plan

Teaching and Learning



Initiative 1.1: Create Common Virtual or Physical Space

As this initiative to “create an integrated virtual and physical center for faculty to access academic technology, research, and instructional design support,” was created before the TSI report and creation of the Faculty Hub, we will need to rework this goal to accommodate changes. We will consult with Dr. Linda Boland, Director of the Faculty Hub, and University Librarian Kevin Butterfield, to see how our various services can be streamlined.

In addition, it was announced in Summer 2019 that the Technology Learning Center (TLC) will be moving from the third floor of Boatwright Memorial Library to the second floor, where the Media Resource Center currently resides. We believe this move, which will be completed by May 2020, will make technology support services more accessible to faculty and students.

The Extreme Science and Engineering Discovery Environment (XSEDE)

As Information Services supports an increasing amount of compute-intensive research on campus, we anticipate the need for more platforms to meet the challenge. XSEDE is a National Science Foundation-supported framework that scientists can use to interactively share computing resources, data, and expertise. Fred Hagemester is now a campus champion for XSEDE and will expand our web documentation for this resource and work with faculty to get started with XSEDE and similar externally-funded resources.

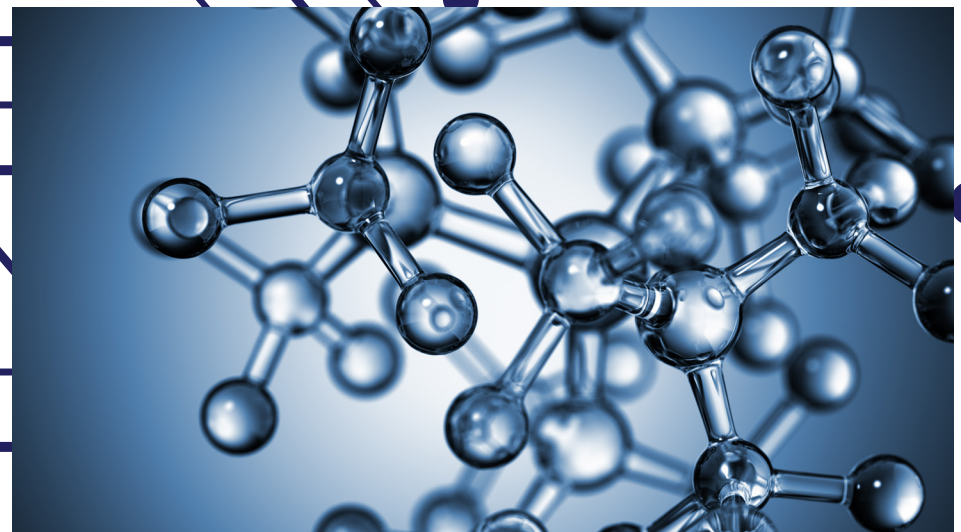
Initiative 1.5: Research Computing Support

While the work of the first phase initiatives is ongoing, there have been noteworthy achievements. For initiative 1.5, which seeks to expand research and scholarly computing support services, Research Analyst Dr. Fred Hagemester has worked with his team to support a High Performance Computing (HPC) proof-of-concept project in which representative faculty from across campus tested their computationally-intensive research projects in an environment provided by the Physics Department and set up by Senior System Administrator Sashko Stefanovski. A report with recommendations was presented to both A&S and the Provost Offices to make decisions. In addition, IS has provided consultation to A&S for the development of a 12-18 month position to support computing-intensive research in the STEM-6 departments.



Faculty with High-Performance Computing Clusters

- Kelling Donald, Chemistry - 1 cluster
- Jerry Gilfoyle, Physics - 2 clusters
- Carol Parish, Chemistry - 3 clusters





Bridging the Digital Horizon

University Information Technology & Information Plan

Leading IT Management Practices

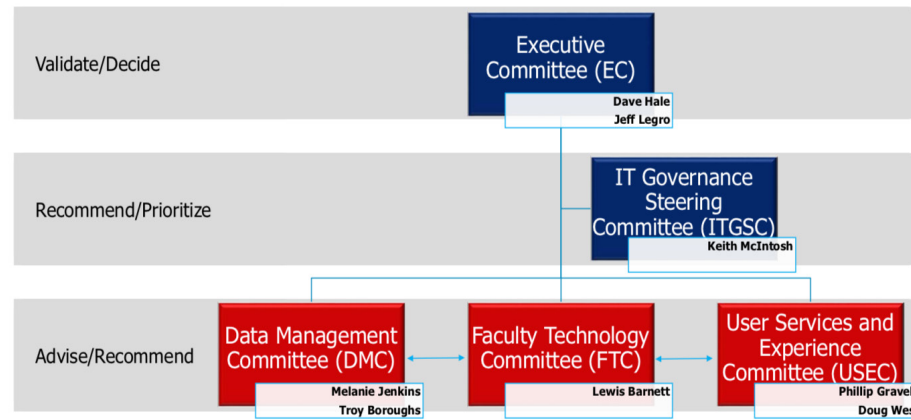
Initiative 4.1: Launching IT Governance

Decisions about technology investments and services require strong collaboration between IS leaders and our academic and administrative partners. In the past, the University has successfully made these decisions through informal consultations, which are no longer enough to navigate all of the priorities that are out there. The University Strategic Plan is increasing the opportunities to use technology to support important institutional goals. But while these opportunities are exciting, resources do not allow us to do everything. Trade-offs need to be weighed - collaboratively.

"It is imperative for us to focus our precious resources on investments providing the best value for the University. IT Governance will facilitate alignment between digital investments, University strategy, goals, and priorities," says Keith W. "Mac" McIntosh, Vice President and Chief Information Officer. McIntosh notes that this initiative is directly related to the University Strategic Plan goal of Stewardship in a Changing World.

Many institutions improve IT decision making by implementing stewardship and advisory structures, often called IT governance. IT governance creates the structures, processes, and policies to allocate resources to an established set of IT priorities. In addition to providing

Tiered Governance Structure



a process through which the University can evaluate and prioritize projects and investments in the context of institutional priorities and values, there are several other benefits to having a formal IT governance structure:

- It improves communication to help everyone use technology effectively.
- The Steering Committee, chaired by McIntosh, is supported by three advisory committees:
 - Data Management Committee, chaired by Melanie Jenkins (Institutional Effectiveness) and Troy Boroughs (Information Services)
 - Faculty Technology Committee, chaired by Lewis Barnett (Mathematics and Computer Science)
 - User Services and Experience Committee, chaired by Phillip Gravelly (University Communications) and Doug West
- It establishes clear pathways for departments to propose new ideas and opportunities;
- It enables shared objectives such as improving processes and data quality;
- It coordinates decisions so one area's project won't adversely impact another's;
- It creates transparency and builds an understanding of IS operations and the full portfolio of IT initiatives;

(Information Services).

How does IT governance work? It begins with a project request, an online form that collects basic information about the proposed project. Information Services then follows up with a project intake interview, which results in a score card that rates the complexity, risk, and return on investment for the project. Only high-resource projects will go to governance: many smaller projects will not need governance and will proceed with Information Services' support.

Project proposals that do require governance will be advanced to one or more of the three advisory committees for review. Each committee will review the proposal, and will forward the project to the Steering Committee with a recommendation to proceed or not to proceed. If the recommendation is to proceed, the advisory committees will propose a priority for the project.

McIntosh says, "Information and technology in the digital era are assets that require the University to maximize value and realize the benefits of our investments. This involves a change in mindset as we embrace a focus on institutional priorities."

The IT Governance Steering Committee will meet monthly to make decisions on whether the proposed project goes forward, and will assign a priority and a timeline to the project so that it can be added to the Information Services project portfolio. In this way, the University community can rest assured that IT projects are being weighed carefully and are considered in the light of the University's strategic plan.

Initiative 4.2: IT Service Management



Initiative 4.2, which calls to implement IT service management methods and software, is an all-IS effort, led by Susan Galvin, Manager of the Project Office. Susan and a core group of IS staff have begun implementation of SpiderTechNet (or “The Net”), an IT service management solution which will eventually facilitate almost every aspect of Information Services’ operations. The team started working on the project management module. Work has also begun on incident management and asset management. Improvements to IS workflows will

result in improvements to service for students, faculty, and staff.

Initiative 4.4: Disaster Recovery and Business Continuity



For initiative 4.4, which focuses on disaster recovery and business continuity, Clovis Khoury, Director, Enterprise Computing, and his team conducted a disaster recovery test of the University’s servers. In testing that was completed in December 2018, we eliminated aging tape technology for backup and restores. We also reduced the time to recover systems from seven days to one day. In addition, we reduced data loss from seven days to one day. This testing means that if we have a Data Center disaster, Clovis and his team will be able to restore services

much quicker and with less data loss than ever before. That means faculty, staff, and students will be back in operation much sooner than they would have been just a year ago.

Initiative 4.5: Cyber Security Awareness



Initiative 4.5 seeks to raise cyber security awareness across the University community. Director of Information Security, Shana Sumpter, led a group of IS staff to promote October 2018 as National Cyber Security Awareness Month (NCSAM). President Crutcher conducted a video interview of Shana for NCSAM, emphasizing that cyber security is a shared responsibility between Information Services and every user on campus. The group sponsored a cyber awareness fair in the hanging lounge of Tyler Haynes Commons, where members of the community could test their passwords to see how

long it would take a computer to crack them, play cyber awareness games, and get help installing LastPass or Duo two-factor authentication. Shana also led a cyber

awareness lunch and learn where she discussed trends across the cybersecurity landscape. As a result of all these activities, the University of Richmond was recognized as a National Cyber Security Awareness Month Champion. In January, the group celebrated Data Privacy Day with a lunch and learn.

Also to boost awareness and prevention, Information Services introduced cybersecurity awareness training, which was mandatory for staff and optional for faculty. Staff completed the course at a rate of 96% and faculty at 17% completion. After the Fall term training, Information Services conducted a phishing test where messages were sent to 2,134 faculty and staff. 139 members of the community responded by either replying to the message, opening the attachment, or clicking on the web link that was included. This was not terrible for the initial exercise, however there is room for improvement. One response could lead to a compromise and loss of data. Information Services is following up in the new year by offering the training again to those who did not take it, and offering a shorter refresher course to everyone who did. IS will continue to test the community periodically to identify areas where improvement is needed. Future tests will alert respondents when they fall for the phishing email and offer immediate feedback and prevention tips.

In an increasingly challenging cyber security environment, Vice President for Information Services and CIO Keith W. “Mac” McIntosh took a request for a new position, Information Security Analyst, to the University’s planning and priorities process, where it was successfully funded starting in fiscal year 2020.

One of the responsibilities of this new position will be the implementation and maintenance of a new endpoint protection system. Over the course of the last year, Information Services evaluated nine different vendors to find the best solution for the University. CrowdStrike was chosen, and it will replace Sophos, which has been the University’s anti-virus solution for the last ten years. Sophos has been effective at detecting signature-based viruses, but hackers today are employing more sophisticated behavior based attack like ransomware and unauthorized remote access. CrowdStrike detects and prevents these behavior-based attacks more effectively and leverages cloud based threat analysis to reduce the time to identify new attacks. CrowdStrike will be rolled out to faculty, staff, and students over the 2019-2020 academic year.



People

Staff Profile

Sybil Fellin

Sybil Fellin is a change agent. As Director of the UR Better initiative, Sybil describes UR Better as “the University’s process improvement initiative that was launched last year, with the goal of streamlining and making our processes simpler, smarter, and more efficient, with the hopes of saving people time that they’re spending now on cumbersome administrative tasks so that they can be doing more valuable things in support of the University’s mission.”

UR Better traces its roots to the University’s Strategic Plan’s fifth goal, which focuses on Stewardship in a Changing World. The third initiative of this goal is to “Work aggressively to achieve the University’s goals while moving away from an additive model that places stress on the human, environmental, and financial resources of the University.”

Launched a year ago, UR Better asked for suggestions on processes that could make a substantial improvement in the productivity of the University community. To date, they’ve received 190 ideas. Sybil and Dustin Engels, UR Better’s Business Process Analyst, scored all of the suggestions against the criteria that the committee had picked for saving time, saving money, aligning people’s time with what they were hired to do. “We brought the highly scored proposals to the UR Better Steering Committee, which is

made up of representatives from all the divisions of the University, and they picked four.” UR Better had determined that they could handle four process improvements at a time.

One year later, they have successfully launched their first business process improvement, a revamping of the process through which undergraduate students declare a major or minor. Previously, students had two weeks at the start of the term to collect the approval of the department chair, who would assign the student a major advisor. Then they had to take it to the Registrar’s Office, who entered the information into Banner. Today, a student can simply go to the Registrar’s Office website and access the Declaration of Major/Minor Online Form. The form was created by Deb Warrick and Ray Cargill on the Information Services Administrative Systems team, with the assistance of UR Better and the Registrar’s Office. Information Services built the application using software the University already licensed along with software the University procures from Oracle.

While the software was licensed, it hadn’t been used by the University before. For Information Services, responding to the needs of UR Better meant a venture into application development, which hasn’t been done at Richmond. More than fifteen Information Services staff were involved in some way along the path to developing this application, which requires six servers to run. The system can be used for future UR Better applications. “So far, all of our projects have had an IT component,” Sybil says. “We’re working with the Enterprise



Systems group, the Network Services group, and the database and system administrators; they are integral to all the solutions.”

The results have been gratifying: in less than one month, with no promotion of the new application to students, more than 100 major/minor declarations have been processed. “It’s a much cleaner, smoother process now,” says Sybil. “Now, a student in Maine can log into the system, and by the end of the day that whole process is done. Before, they couldn’t even do it until they were on campus and could pick up the paper form. And it’s better for the Registrar’s Office, who was getting about 800 forms a semester, and they’d get that all in a matter of weeks, which was a lot of work in a short amount of time. And now the work can be spread over the summer.”

The other three processes that are being improved also involve a technology component. For faculty and staff, the travel and expense reporting process is going to be simplified through the implementation of a new application called Chrome River, which will shorten the amount of time it takes to assemble and approve a reimbursement. Improvements are also coming to the Human Resources Personnel Action Forms, about a dozen of which are currently in PDF form on the HR website. Currently, these have to be printed out, signed, and submitted to be processed. Fellin believes that the application set up for the major/minor declaration process can be used to streamline the HR PAF process. The final process being improved is interdepartmental charges. This is also currently a paper-bound process that’s

prone to errors, which create more work to be corrected. And there's no backup documentation if something is called into question. This last process is still being evaluated to determine how it can be made more efficient.

But with the major/minor declaration form launched, and Chrome River well on its way, Sybil says that UR Better is planning to take on two new initiatives in the coming year. While they have high-scoring proposals that have already been submitted, they are open to new proposals, which can be submitted through a form on the UR Better website. There's also a suggestion box in the Facilities area. "We're looking for administrative processes, where we could organize how we do things at the University in a different way to make them better.

What we look at is how much time can be saved, how much money could be saved, how much quality improvement is available, if there is any compliance or risk management component, or if it's something that affects a lot of people."

Sybil has worked at Richmond for a total of 11 years. She and Dustin are the project managers for the UR Better projects. They're trainers, they create communication plans, and serve as business process consultants who analyze work processes to see how they can be improved. They also spend time looking at how other universities do their work to see how we might improve ours.

"If you have something where you feel there ought to be a better way to do it, let us know."

People

Information Services

2018-2019 Staff

- Rett Alexander
- Frank Amrhein
- Eli Anderson
- Alem Areki
- Don Babb
- David Barth
- Micah Berry
- Ellis Billups
- Troy Boroughs
- Vickie Brady
- David Brandon
- Doug Broome
- Ray Cargill
- Stephanie Charles
- Jason Cope
- Kevin Creamer
- Dora Douglas
- Jamie Fairley
- George Flanagan
- David Foster
- Melissa Foster
- Bill Galaspie
- Bryan Gallagher
- Susan Galvin
- Sam Gibbs
- Melvin Gray
- Virginia Griffith
- Fred Hagemeister
- Mitch Hanley
- Pam Harper
- Alison Harvey
- Tequita Hawkins
- Bobby Hayes
- Oz Herbert
- Scott Hollen
- Kathy Hoskins
- John Hurst*
- LeVonne Johnson
- Chris Kelly

- Fess Khan
- Clovis Khoury
- Susan Kirby
- Mike Koontz
- Bob Littlepage*
- Nick Lydick
- Keith W. McIntosh
- Althea McMillian
- Greg Miller
- Marge Musial
- Julie Neville
- Mark Nichols
- Eric Palmer
- Lee Parker
- Vinny Petrone
- John Reeves
- Cheryl Richards*
- Lennie Rimmer
- Karl Schmitz
- Mike Scioscia
- Phil Sherman
- Beth Simms
- Sashko Stefanovski
- Orlanda Stevens
- Rob Stuckey
- Shana Sumpter
- Wilbert Thacker
- Scott Tilghman
- Derek Toro
- Deb Warrick
- Doug West
- John Wheeler
- Melody Wilson
- Andrea Zinski
- Steve Zinski

* Retired or left the University during the 2018-2019 year.

Curriculum Change Form

Degree and Major/Minor/Concentration Declaration

Instructions

To Declare/Change a Major/Minor – click the 'Change Curriculum' button. Use the 'Add Major/Minor' button to add new rows; use the edit icon (yellow pencil) to change existing rows or delete a row. If changing your primary major, you may enter comments for the department chair to read and consider when assigning your advisor. Click 'Submit Request' when done. You will receive an email confirmation when your request has been fully processed. Your GradTracker audit will reflect your changes on the following day.

To Declare Pre-Business Intent – use the Pre-Business Intent section below the curriculum grid.

[For more detailed instructions, click [here](#)]

Questions? – contact the Registrar's Office at (804) 289-8639, or email registrar@richmond.edu

Make Changes to your Current Curriculum

Student Name: **Richmond Spider** Notice: **The declaration period has ended. Your submitted Major/Minor form will be processed at the end of this semester, effective for the upcoming semester. Major/minor forms for students who have applied to graduate will be processed when received.**

Change Curriculum

Degree #	Degree	Type	Major/Minor	Concentrations
1	BA	MAJOR	Undeclared	N/A

People

Faculty Profile

Kelling Donald

Dr. Kelling Donald, Associate Professor of Chemistry, is a busy man. In addition to teaching chemistry in the Integrated Quantitative Science (IQS) class, Kelling has his research lab, serves on the University Faculty Senate, and he was recently appointed as a councilor for the Chemistry Division of the Council on Undergraduate Research (CUR).

Kelling, who came to Richmond in 2007 and won the Distinguished Educator Award in 2013, uses technology in his teaching and research. For the IQS class, which is using the theme of climate change across the disciplines, he teaches in the recently renovated Gottwald A-201 classroom. This classroom has wall-to-wall whiteboards and six projectors. Each of the projectors is set up as a Solstice pod, which allows Kelling and his students the ability to wirelessly project in the classroom. This is great for group work, in which IQS students engage in regularly. His chemistry students use Word, Excel, and Mathematica to do their work. Kelling doesn't use PowerPoint to teach; he writes on the whiteboard as he lectures, and occasionally shares visualizations of molecules from his own laptop, which he brings to class. For his upper level chemistry courses, like Physical Chemistry, students also use Gaussian to model molecules. For all of his courses, Kelling says, "I don't generally use Blackboard for grading, or to keep track of grades, but I use it for students

to get materials from me, and also for students to upload lab assignments." He finds it easier to manage uploaded assignments than it is to receive assignments via email.

Students also have access to instruments like the Nuclear Magnetic Resonance, or NMR, instrument. "It's one of the advantages here on the technology side, and on the instrument side, that (undergraduate) students get exposed to using all of these technologies in class. In class they get access to instrumentation that students at other places just sort of look at from above."

In his research, Kelling usually has four to five active projects, with six to eight student researchers assisting. He and his students use Gaussian and other tools on high-performance computers and on computational clusters. This allows them to look at more complicated molecular structures, with calculations that take days or weeks to complete. He collaborated in the recent high-performance computer shared cluster proof of concept project, where faculty from Chemistry, Physics, Economics, and Computer Science shared and scheduled time on a computational cluster. While the cluster used for the proof-of-concept test was slow, Kelling felt it was a successful use of a shared resource. His students were able to get their work done on the cluster in queue with the work of other researchers. The School of Arts & Sciences and the Provost are looking further into the possibility of getting a shared cluster at Richmond.

In his lab, students use computers as terminals to the clusters he uses. The



clusters run Gaussian, while the local computers run a program called Gauss View, which creates the visualization of molecules processed by Gaussian on the clusters. Kelling appreciates the VPN, which allows him to check in on his systems when he is away at conferences. In some cases, calculations have been completed while he was away, with remote access allowing him to update his presentation with the new results.

Looking ahead, Kelling would like to be able to project 3D models of molecules in class, so that he can manipulate them for students to see. But he still wants as much whiteboard space as possible for writing.

Kelling is also investigating tools that facilitate collaboration with his lab group. While he's not sure how much students use Box on their own, his research students share a Box

folder. But a tool like Slack may make it easy for Kelling to communicate with his students when they are working on their research, or when they are working out their schedules at conferences they are attending together.

Senior Supreeth Prasad, one of the students on Kelling's research team, praises him. "Dr. Donald has been an amazing mentor. He helps me whenever I have problems or issues. The advice he has given me has really helped me progress as a student and as a person. I feel that ever interaction I have with him, I leave learning something new. He wants his students to do well, even if it means they struggle in the moment temporarily, because the pay-off is magnificent. He has placed me in charge of a few projects and learning how to handle that responsibility is something I could have only learnt from him."

People

Information Services

2018-2019 Student Staff

Elise	Mariana	Jay	Imran
Graysen	Nysa	Basel	Tra My
Henry	Kobi	Jaewan	A'kayla
Alex	Stella	Shamim	Junko
Viktor	Ross	Zoltan	Marcelo
Ruhan	Callie	Anja	
Jason	Marissa	Hammad	
Kobi	Henna	Sophie	
Xavier	Travis	Jajani	
Alec	Jasmine	Kartikey	
Taneha	Elijah	Maggie	
Marissa	Lucy	Ahsan	
Lorea	Barbara	Indra	
Jeremiah	Mitchell	McKenna	
Mysia	Amina	Justin	

People

Information Services

2018-2019 Partners

Attronica	TeamDynamix
Jay	Serkan
Eric	
Ben	
Brenden	
Chris	
Bell Technology	
Fred	
Metro Systems, Inc.	
Dominique	
Alex	
Summit Human Capital	
Eli	
Alex	
Sycom	
Brenda	

Winners of the International Education / Sustainability 2018 South Africa Ecochallenge



In the Past 11 Years...

The University's internet bandwidth capacity has grown

3,232%

High performance computing clusters have increased

770%

Technology infrastructure has been installed in

9

new buildings and

41

major renovations

Audio/Video installations in meeting rooms has increased

309%

Public TV installations have grown

978%

