

Information Technology University Budget Hearing 2018 – 2019

April 5, 2018



Agenda

- **Results from Last Year**
- **Themes for 2018-2019**
 - Budget Priorities for Success
- **Discussion**

2017-2018 Recurring

Description	Funding Received	Results
Data Architect (Data Intelligence Analyst)	\$129,787	• Hiring underway
STEM/A&S Embedded College IT Support	\$98,154	• Hiring underway
UNC-SO Professional Development Reporting – LMS	\$67,013	• Hiring underway
IT Mandated Contractual Cost Increases	\$78,345	• Complete
Banner Hosting Increases	\$69,750	• Complete
Technology Commons Extended Hours Support	\$50,000	• In process
Firewall Upgrade	\$89,000	• In process
HHS Cell Phone Antenna System Maintenance	\$11,900	• In process
Cyber Insurance	\$24,000	• Complete
Software Delivery for Students	\$125,000	• In process
CATalytics Dashboard	\$13,000	• In process
Operating Budgets	\$21,528	• In process

2017-2018 One-Time Funds



Description	Funding Received	Results
HHS Classroom Fixes	\$80,000	• In process
CATalytics Consulting	\$24,750	• In process
Instructional Technology Refresh	\$230,674	• In process
Firewall Hardware Upgrade	\$239,525	• In process
Network Wiring Closet Environment – Phase 2	\$30,000	• In process
IGA Implementation Services Phase 3	\$150,000	• In process
Network Closet Generators – Phase 2	\$125,000	• In process
Data Center Network Switch	\$152,675	• In process
Utility Relocation and Infrastructure – Phases 1,2,3	Total effort TBD	• In process
Data Center Capacity (Storage)	\$31,185	• In process
HHS Video Control Upgrades	\$45,000	• In process
Auditorium AV & Projector Upgrades – Phase 1	\$50,000	• In process
VCAT Management Tool	\$13,000	• In process

Projects and Support

Academic and Learning Spaces

- Catamount School – Fall 2017 start
- MSW for Biltmore Park* – Fall 2017 start
- DPT for Biltmore Park* – Fall 2018 start
- Laptop Requirement for Fall 2018
- Strategic Classroom Renovations* (4)
- Apodaca Science Building: Technology Analysis and Design*
- Graduate School Multi-term Registration Pilot
- Honors Contract Automation
- Student Application Delivery (VCAT 2.0)
- VMWare Virtualization Upgrade for COB and Faculty Partnership
- 3D Printing – Curriculum Integration
 - HHS, College of Business, Art and Design
- Student Computer Services – Repairs
 - 2017 – 863 students
 - 2016 – 969 students

* IT and Coulter Faculty Commons (CFC)

Non-Academic

- Banner 9
- VoIP Implementation
- UG Admissions System
- myWCU Phases 3 and 4
- Advancement
 - Data needs and Raiser's Edge analysis
- E-Card Access RFP with Residential Living
- Construction (Brown, URH)
- PAW Print
- Identity Management – Year 3
- Hosted National 2017 Student Technology Conference
- Security – Multifactor Authentication
- Utility Relocation and Infrastructure
- Wireless Enhancements
 - Eduroam, Guest WiFi, Media WiFi, Scott Residence Hall pilot
- Process Efficiencies
 - Banner Workflow, HR Workflow, Faculty Letters, Telecom Billing, OnBase Document Management

Reallocations / Process Efficiencies



- **Repurposed or adjusted positions**
 - Wireless Specialist (repurposed position)
 - Educational Technology Integration Specialist (adjusted position)
 - Embedded IT -- Campus Services (joint effort with Campus Services)
 - Technology Commons Team Lead (adjusted position and reallocated funding)
- **Shift Left – Program to move support tasks to IT Help Desk and Tech Commons**
 - LMS Tier 1 support (Class copies, course merges, access issues; Additional moves in process)
 - Mercury (H drive) support (Folder creation, permission changes, data restores)
 - O365 Admin (Information verification, permission changes, additional troubleshooting)
 - IGA support (MFA enrollment, add/remove security risk holds before/after remediation)
 - Active Directory support (Renew non-person accounts, group membership changes)
 - Looking at networking opportunities
- **Phone billing automated and absorbed into CIO Office processes and staff**
- **PAW Print billing and vendor processes significantly modified / automated**

Inputs to Themes

WCU 2020 Strategic Plan

IT Strategic Plan

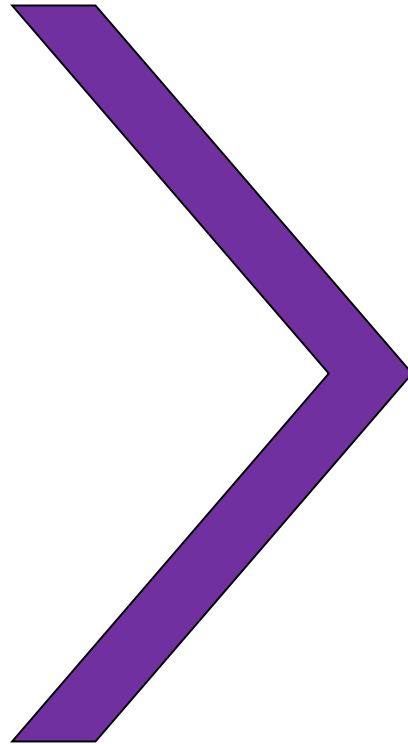
IT Governance Committees
and Council

IT Administrative Program
Review

IT Risk Assessment
and IT Risk Register

Surveys, Studies, and other
Feedback

Board of Governors, UNC
System Office, Trustees –
Cybersecurity, Governance,
and IT Audits



Themes

- **Protecting WCU: Security / Risk**
- **WCU Competitive Compensation**
- **Learning Spaces: Technology and Support**
- **Supporting Growth: Infrastructure / Capacity**

Themes

- Protecting WCU: Security / Risk
- Learning Spaces: Technology and Support
- Supporting Growth: Infrastructure / Capacity

A Lot More Focus and Concern



Protecting WCU: Security / Risk

- **NC Office of State Auditor**
 - University IT Audits
- **UNC Board of Governors**
 - Audit, Risk Management, and Compliance Committee
 - 3 Information Technology Policies
 - 1400.1 IT Governance Approval expected May 2018
 - 1400.2 Information Security Approved January 2018
 - 1400.3 User Identity and Access Control Approval expected May 2018
 - Requiring WCU Board of Trustee oversight
- **Cyber Insurance**
- **Nationwide Experiences and Vulnerability**
 - Especially via social engineering (e.g., Phishing)

WCU Phishing Statistics

- **From January 1, 2018 through March 21, 2018**
 - Over 115 phishing campaigns
 - Each campaign drives at least 50 help desk calls
 - Each compromised account takes IT at least 30 min to remediate
 - Much more sophisticated
 - Increasing number of students targeted
- **Impacts WCU reputation**
 - Numerous complaints to WCU
- **Each week**
 - 7,500+ phishing emails, 16,000+ suspicious events

IT Security Framework

Prevent

- Policies
- Access management
- Scanning
- Vulnerability assessments
- Risk assessments
- Sensitive data inventory
- Privilege account mgmt.
- Multifactor authentication
- Network protections
- Penetration testing
- Training

Detect

- Logging
- Log analysis
- Monitoring
- Tools
- Specially trained resources

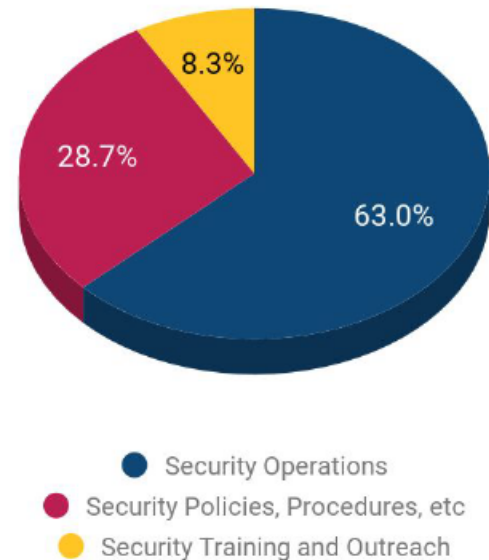
Respond

- Incident response plan
- Cyber insurance
- Access to special resources
- Training

Campus IT Security Staffing Levels

Campus	# of Dedicated, Full-time Security Professionals	Total Headcount	Headcount per Full Time Security Professional
ASU	3	21,449	7,150
ECU	6	34,547	5,758
ECSU	1	1,768	1,768
FSU	1	7,043	7,043
NC A&T	2	13,510	6,755
NCCU	1	9,308	9,308
NCSU	12	43,228	3,602
UNCA	1	4,551	4,551
UNC-CH	13	42,796	3,292
UNCC	7	32,763	4,680
UNCG	4	22,446	5,612
UNCP	2	7,108	3,554
UNCSA	2	1,465	733
UNCW	2	18,456	9,228
WCU	1	12,495	12,495
WSSU	2	5,981	2,991
NCSSM	0	887	Divide by Zero
UNC-GA alone	1	439	439
UNC-GA with hosting	1	56,560	56,560

FTE Distribution of Security Personnel



Source: UNC System Office

Protecting WCU: Security / Risk Requests



Recurring

- **Cybersecurity Operational Analyst**
- **Anti-phishing Security Service**
- **WCU data center enhanced security capability for servers / cloud**
- **WCU Endpoint Patch Management Specialist**
- **Campus IT Threat protection service**
- **Mobile Device Management Tool**

Non-recurring / One-time

- **Security/Phishing Awareness Testing and Education**
 - Faculty, Staff, and Students

Themes

- Protecting WCU: Security / Risk
- Learning Spaces: Technology and Support
- Supporting Growth: Infrastructure / Capacity

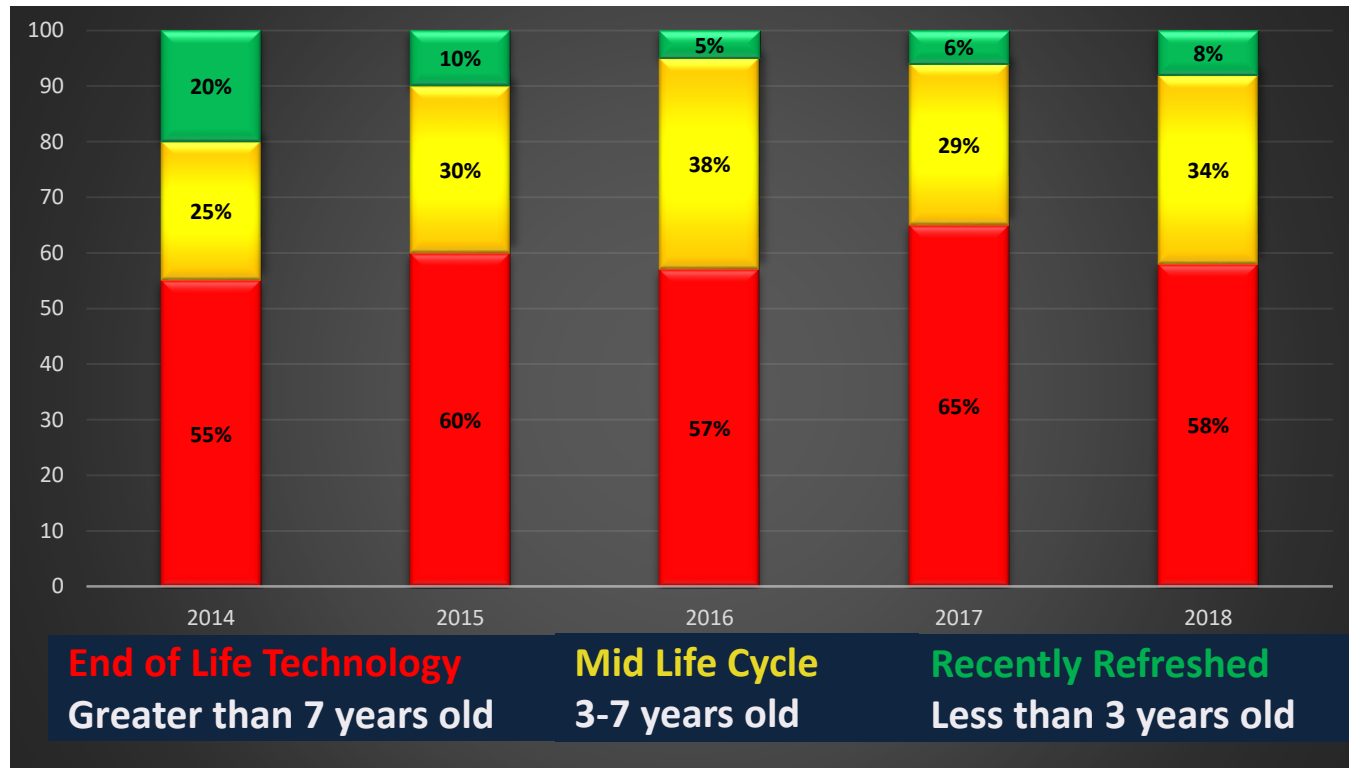
Strategic Learning Space Pressures WCU is Facing



Learning Spaces

- **Student and faculty expectations**
 - Experience
 - Success
- **BYOD**
 - Apodaca Science Building
 - Laptop requirement
- **New teaching methods and modes**
 - Online, hybrid, etc.
 - New tools
- **Academic integrity**
- **Learning Spaces / Classrooms**
 - Standardization
 - Tied to teaching methods
 - Faculty know what to expect
 - Classroom mix
 - Easier to support
 - Beyond 8-5 support
- **Remote faculty members**
 - Feeling a part of WCU
 - Training and support needs
- **Biltmore Park / Cullowhee concurrent classes**

Learning Spaces Technology by Age



- Sustainable funding remains the issue
- *External Program Review conducted this Spring*
- Changing to a set of six classroom standards based on teaching method
 - Strategic mix will change over time

LMS – Blackboard Leveraging Our Investment

- **Today's Key Focus is:**
 - Maintaining Blackboard LMS
 - Assisting faculty in appropriate and effective usage to meet learning outcomes
 - Fulfilling the increased number and length of consulting requests
- **Provided Additional Capacity to LMS Support Team – Moved Tier 1 Support to IT Help Desk (*Shift Left*)**
- **Deficit: Getting to Enhanced Value**
 - We own it; Need to leverage our investment
 - Includes Learning Tool Integrators (LTIs) such as SCORM
 - New tools and capabilities currently within Blackboard
 - Project efforts such as faculty task automation and preferred name
 - Preparation for next generation of Blackboard
- **Needed: Full-time Blackboard System Developer**
Additional Blackboard Consultation and Support Position

Learning Spaces: Technology and Support Requests



Recurring

- Strategic Learning Spaces Technology Fund
- Blackboard System Developer
- BYOD Initiative Fund
- Blackboard Consultation and Support Position
- Technology Commons Refresh Fund
- After Hours Learning Spaces Support

Non-recurring / One-time

- Student Laptop Loaner Pool
- Learning Spaces Equipment Upgrades
- Auditorium AV Upgrades
 - Phase 2: BAC 130 and FO 101
 - Phase 3: BAC 223 and CO 260
- HHS Learning Spaces Critical Fixes Phase 2
- 3D Printing Expansion for Curriculum Integration

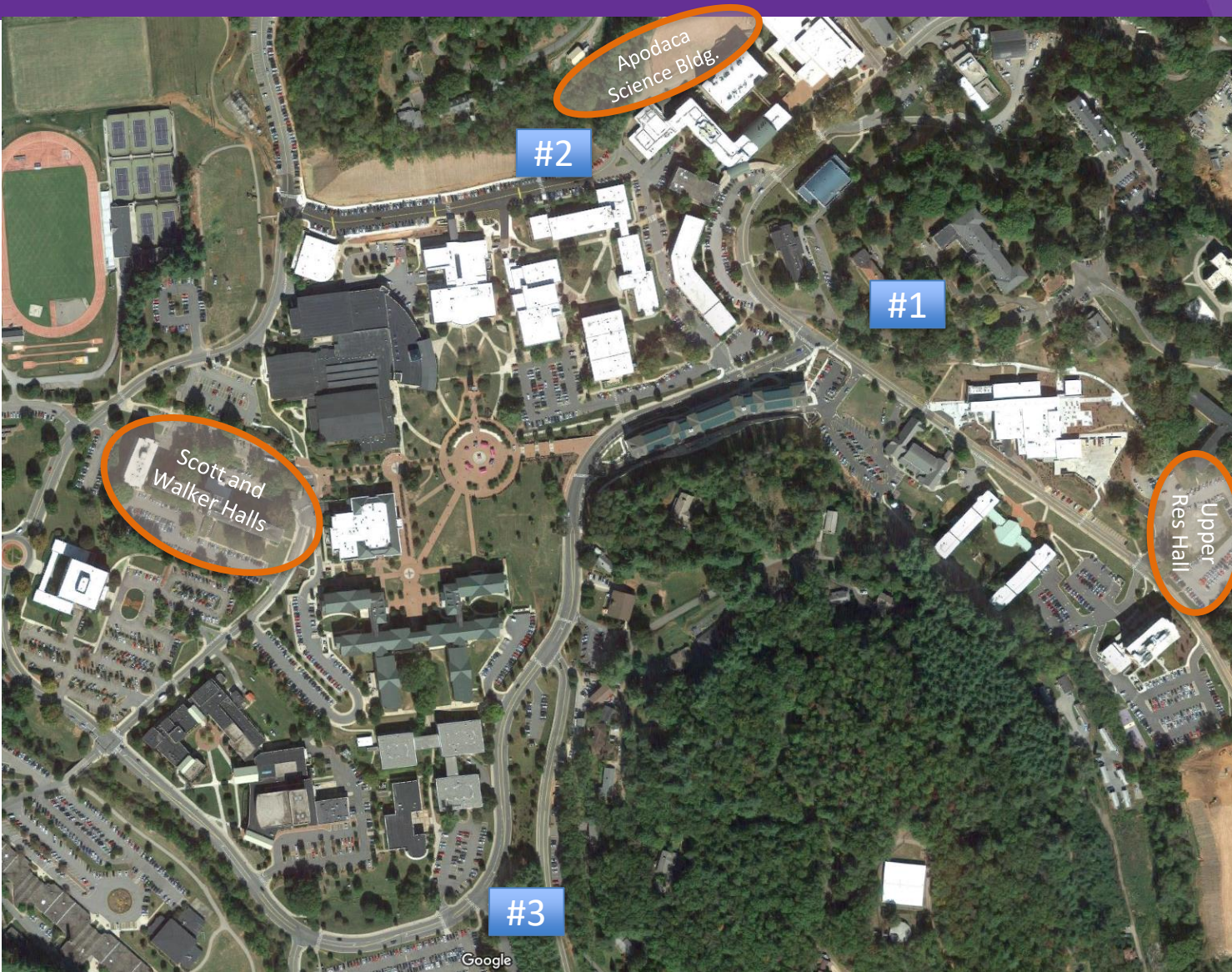
Themes

- Protecting WCU: Security / Risk
- Learning Spaces: Technology and Support
- Supporting Growth: Infrastructure / Capacity

Infrastructure/Capacity Drivers

- **Enrollment Growth**
- **Master Plan**
- **Construction**
 - Apodaca Science Building
 - Upper Residence Hall
 - Lower Residence Hall
 - Scott and Walker demolition
- **Underground Utility Condition and Capacity**
 - Conduit and cabling
 - Failures
- **Demand for Conference Room Technology**
- **Risk Management**
 - Business continuity
 - Data Center data backup
- **University Business Process Automation**
 - Demand to improve
 - Identity Management / Single Sign-on
- **Endpoint Device Management**
- **IT Asset and Computer Lifecycle Management**

Utility Relocation and Infrastructure



- Supports WCU's planned growth and construction
- Includes:
 - Retire 30+ year old cabling
 - Upgrade of conduit and cabling
 - 3 Network / Telecom concentration points
 - Remove concentration points from buildings
 - Fiber ring to buildings
- Area #1
 - Graham demolition
 - New main phone company connection point
 - Upper residence hall
- Area #2
 - Apodaca Science Building
 - Lower residence hall
- Area #3
 - Scott demolition

Generator Power for Priority Building Networking Closets

- Enables VoIP telephones and data networks to operate during an extended power outage
- Construction standard since HHS building

Phase 1 Buildings

1. Belk
2. Bird
3. HFR
4. Killian
5. Killian Annex

Small amount of work at Belk remaining, then State Inspection.

Phase 2 Buildings

1. Bardo Fine & Performing Arts
2. Bookstore
3. Camp
4. Forsyth
5. Stillwell
6. University Center

Design work nearly complete.
Next step: bid request.

Phase 3 Buildings

1. Coulter
2. Hunter Library
3. McKee
4. Natural Science
5. Ramsey
6. Reid

Initial planning underway.

Supporting Growth: Infrastructure / Capacity Requests



Recurring

- Applications / Banner Developer
- Identity Management / Single Sign-on Capacity and Sourcing
- IT Asset Management Staffing and Process Capacity
- Conference Room Technology and Standardization Initiative

Non-recurring / One-time

- Network Bandwidth Appliance Upgrade
- Utilities Relocation Projects
 - Phases 2, 3
- IT Closet Generator Power – Phase 3
- Identity Management / Single Sign-on Phase 4
- Enterprise Data Backup Solution Upgrade

Discussion

Questions ?

For reference only: Recurring Requests FY19



Priority	Request Title	Recurring Funds	Non-Recurring Funds	Description
1	Security: Cybersecurity Operational Analyst	\$113,472	\$6,000	Proactive monitoring and assessment of operational cybersecurity, and manage risk/vulnerability remediation process. This is a security best practice and needed to meet PCI & State IT audit requirements.
2	Security: Anti-Phishing Security Service	\$60,000	\$35,000	Hosted service that helps prevent phishing attempts by quarantining the messages, and preventing them from reaching faculty/staff/student email inboxes.
3	LS: Strategic Learning Spaces Technology Fund	\$450,000	\$450,000	Maintain up-to-date, reliable technology in learning and collaboration spaces. The goal is to give faculty & students a better experience. The initiatives include: learning space standardization, PC & projector refresh, analog-to-digital conversion, voice reinforcement, and mobile device integration.
4	LS: Blackboard System Developer	\$98,000	\$6,000	Add a resource needed to appropriately develop, test, and deploy additional LMS features. This will allow WCU to use more of the Blackboard LMS integrated learning tools/capabilities that would benefit faculty and students.
5	Security: WCU Data Center Enhanced Security Capability for Servers / Cloud	\$106,376	\$118,434	Increases ability to leverage the cloud for disaster recovery/business continuity, and adds the ability to reduce intrusion through network segmentation. Will increase security posture by allowing servers to be locked down to talk only to other servers required for functionality.
6	Growth: Applications / Banner Developer	\$95,000	\$6,000	Resource to more quickly deliver Banner related enhancements and reporting capabilities. Address current requests for data integrations with other systems, reporting/data needs, and workflow/process automation.
7	Growth: Identity Management / Single Sign-on Capacity and Sourcing	\$50,000	\$50,000	Purchase of resource/capacity/staff augmentation. Solution architecture, upgrades, and knowledge transfer.
8	Security: WCU Endpoint Patch Management Specialist	\$89,000	\$6,000	A position to lead and assist with the management of all WCU owned devices (learning spaces and faculty/staff PCs, tablets, etc.). Automate and manage processes that ensure up-to-date device security and functionality.

LS: Learning Spaces

For reference only: Recurring Requests FY19 (cont.)



Priority	Request Title	Recurring Funds	Non-Recurring Funds	Description
9	Growth: IT Asset Management Staffing and Process Capacity	\$70,000	\$0	Convert two hourly positions to full-time to gain lost productivity and efficiencies when the staff take their mandatory month off. The services they provide directly impact students and their computers being repaired.
10	LS: BYOD Initiative Fund	\$25,000	\$106,778	Funds to acquire and manage 100 tablet devices to be used for Orientation and as Technology Commons checkout equipment. Converting learning spaces to BYOD has created the need for this alternative service delivery format.
11	LS: Blackboard Consultation and Support Position	\$58,000	\$6,000	The increasing number of courses delivered through the Blackboard LMS requires additional Tier 1 LMS support for faculty. This will improve response timeliness and quality.
12	Security: Campus IT Threat Protection Service	\$19,000	\$0	Purchase the Microsoft Advanced Threat Protection service for university owned devices. Works with campus antivirus tools to allow quick detection and proactive response to malware and other threats.
13	Security: Mobile Device Management Tool	\$90,000	\$35,000	Software to manage all university owned devices on and off campus, improving security & protection of university data on the devices.
14	Growth: Conference Room Technology and Standardization Initiative	\$50,000	\$0	Standardize two university conference rooms with updated display and conferencing technology. This is in response to issues experienced during video conferencing, and to reduce the need for constant IT support.
15	LS: Technology Commons Refresh Fund	\$50,000	\$0	Maintain reliable and up-to-date technology, and create additional student stations and checkout equipment. The area contributes to student success as it is one of the largest technology enhanced student study spaces on campus.
16	LS: After Hours Learning Spaces Support	\$65,000	\$6,000	Allow vital upgrades and maintenance to learning spaces technology after-hours and weekends when the spaces aren't in use. Increasing use of learning spaces makes it difficult to schedule work during regular hours.

LS: Learning Spaces

For reference only: Non-Recurring Requests FY19



Priority	Request Title	Non-Recurring Funds	Description
1	Growth: Network Bandwidth Appliance Upgrade	\$380,000	Increase internet bandwidth from 5 Gbps to 7 Gbps. Ensures adequate bandwidth for increasing enrollment, new faculty/staff FTE, and instructional/research needs. Allows quicker downloads and a more consistent internet experience.
1	Growth: Utilities Relocation #3 Design	\$100,000	Planning and engineering to construct the Utilities Relocation #3 project. This replaces full and collapsed conduit infrastructure and obsolete telephone cabling which is failing due to water intrusion.
2	Growth: IT Closet Generator Power - Phase 3	\$265,000	Mitigate the risk of VoIP telephones and the data network failing in the event of a commercial AC power outage. This project is the Phase 3 of 3 and completes all priority campus buildings identified during the needs assessment.
3	LS: Student Laptop Loaner Pool	\$158,000	Laptop loaners to support students when their computers are broken or checked-in for repair. The BYOD initiative will require students to have a laptop for classes.
4	LS: Learning Spaces Equipment Upgrades	\$450,000	Address immediate needs for technology refresh in learning and collaboration spaces, improving reliability and giving faculty & students a better experience. Initiatives include: learning space standardization, PC and projector refresh, analog-to-digital conversion, voice reinforcement, and mobile device integration.
5	Growth: Identity Management / Single Sign-on Phase 4	\$110,000	Provide backup for 1-deep staffing and the expertise needed to maintain growth in IGA capabilities. Keep the IGA environment up-to-date by performing large, complex updates to the application, related database, and OS versions.
6	Security: Awareness Testing and Education	\$35,000	Cybersecurity experts to assess university posture and increase awareness for social engineering attacks (e.g. phishing). Testing WCU employees and students using social engineering methods, such as simulated phishing e-mails.
7	LS: Auditorium AV Upgrades - Phase 2: BAC 130, FO 101	\$40,000	Phase 2 of 3 to upgrade the projectors in auditorium spaces to new laser technologies which provide a brighter image, have a longer lifespan, and operate without filters (less manual maintenance).
7	LS: Auditorium AV Upgrades - Phase 3: BAC 223, CO 260	\$40,000	Phase 3 of 3 to upgrade the projectors in auditorium spaces to new laser technologies which provide a brighter image, have a longer lifespan, and operate without filters (less manual maintenance).
8	LS: HHS Learning Spaces Critical Fixes Phase 2	\$20,000	Replace damaged/irreparable classroom equipment in HHS Rooms: 187, 211, 239, 333, 421, 445, 449. Needed to ensure the delivery of quality instruction in the rooms.
9	LS: 3D Printing Expansion for Curriculum Integration	\$20,000	Additional 3D printing equipment/functionality requested by faculty who have integrated the service into their courses. Includes specialized printers and a system to recycle print filament waste.
10	Growth: Enterprise Data Backup Solution Upgrade	\$100,000	Replace existing enterprise backup solution with a better, cleaner, more cost effective solution. Adds virtual desktop environment backup capability.

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