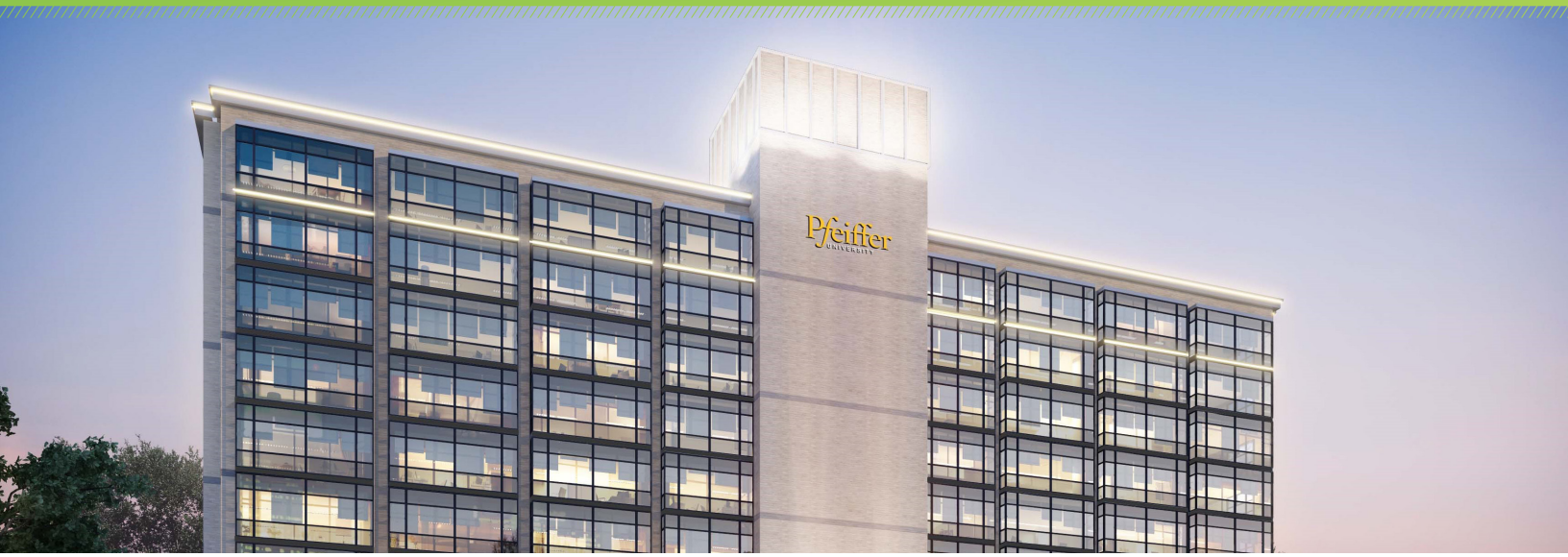

Pfeiffer University

With an aging network due for a refresh, the IT team at Pfeiffer University, a private liberal arts college in North Carolina with around 2,000 students, knew they needed a leader to spearhead a network upgrade. In the fall of 2016, Dr. Ken Russell joined Pfeiffer University to lead a six-person Digital Transformation and Technology (DTT) team. As VP of Digital Transformation and CIO, Dr. Russell's main priority was to revamp and expand the technological landscape across Pfeiffer's five locations. One of the first projects the DTT team worked on involved tackling the aging network, which had no centralized management capabilities and provided little visibility into network analytics. Dr. Russell explained, "What I wanted to do was not just fix the network at Pfeiffer, but position Pfeiffer for the 21st century in a way that showed folks that even a small university can have a big impact with the right environment."

When it came time to investigate a new networking solution, Cisco Meraki was already at the top of Dr. Russell's mind, even moreso after attending a Meraki webinar. The advanced and reliable technology, robust troubleshooting capabilities, and easy-to-use dashboard helped set Meraki apart. "We wanted something that was built for the future. Something we could easily implement and maintain. The fact that the Meraki dashboard can tell us where things are going great and where things might have some trouble was perfect," Dr. Russell shared. Thanks to the opening of a new Charlotte, North Carolina campus, the DTT team had the chance to build a new network from the ground up. With the need to create a network that could support and enable new projects, like IPTV, in mind, the team first purchased Meraki MS switches and later deployed MR access points and MX security appliances. Dr. Russell shared, "At the Charlotte site, our Meraki switches and firewalls are on display for all to see in a custom designed, glass-walled data room. I did that so people would know this was a showcase, our commitment to digital transformation. We're not hiding IT in a closet anymore."

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A variety of multigigabit Meraki access and distribution switches are deployed at the Charlotte campus, including the MS220, MS320, MS350, and MS425s. With more than 1 Gig throughput on each switch port, Pfeiffer is able to future proof their network to support high-bandwidth learning applications. Some of the switches are hardlined for TVs, printers, and Cisco Spark phones, and all of the switches are currently stacked. The ability to segregate traffic via the switches has been instrumental for the marriage and family therapy clinic, which requires this segregation in order to ensure accreditation. Alex Freeman, Operations Network Analyst for the DTT team explained the deep visibility the switches provide, saying, "I can see which stack the switch is part of the client usage, what ports are PoE... I can click into the client and see what port they're connected to... So much simpler and everything is readily available. It's much easier than entering command after command after command."

High-density Wave 2 802.11ac MR53 access points deployed across the Charlotte campus provide students and faculty with a multigigabit

experience to seamlessly support access to online learning resources. Students authenticate into the network using a preshared key, while faculty and staff authenticate via 802.1X. Layer 7 firewall capabilities on the access points also keep students off of P2P sites while the Air Marshal feature keeps rogue SSIDs off the network. Network usage statistics, traffic analytics, and heatmaps are all available in the dashboard, providing the DTT team with valuable student and client data.

From a security perspective, the Pfeiffer team relies on six MX security appliances, with two MX400s deployed at the Charlotte campus, two MX600s at the Misenheimer, NC campus, and 2 MX100s at the Raleigh, NC campus. Along with firewall rules on the access points, the security appliances are configured with traffic shaping and content filtering for P2P and websites associated with malware. Not only has it been easier to configure and manage VLANs, but the team has been able to prioritize VoIP and traffic from their learning management system (LMS) seamlessly on the network as well, ensuring constant uptime for students. One of the team's favorite features is the site-to-site VPN, which they were able to configure with just a few clicks.

Using the remote troubleshooting and management features have been extremely simple for all Meraki product lines and have provided a "reliable environment for faculty, staff, and students," according to Dr. Russell. Scott Perry, Operations Manager for the Office of Digital Transformation and Technology, shared that the team is "thankful to have Meraki. We're able to log into the dashboard and see everything in one spot. You can make changes on the fly, whereas with our old technology we had no centralized management and had to SSH into each product, one at a time."

Future plans for the Pfeiffer University team focus heavily on expanding their wireless reach. They hope to accomplish this by replacing old access points with new Meraki APs at the Misenheimer campus, configuring an additional SSID for guest access, and potentially deploying APs in dorms and outdoor areas. The DTT team loves their Meraki deployment, with Dr. Russell concluding, "We have a really great, robust network and it's exactly what we needed."