2023-2024
UF INFORMATION TECHNOLOGY

PROGRESS TOWARD: THE 2020-2025 STRATEGIC PLAN FOR IT

OUR PURPOSE.
OUR LEGACY.

UF | Information Technology
UNIVERSITY *of* FLORIDA

CONTENTS

TOTAL FY24 PROJECTS
275 Projects

TRACKED

229 Projects

Effort: 45,111 hours

Total Expenses:
$2,848,827

MANAGED

46 Projects

Effort: 37,506 hours

Total Expenses:
$2,626,101

Tracked projects are smaller initiatives. Managed projects are complex implementations.

UNIVERSITY OF FLORIDA

SUPPORTING TRANSFORMATION @ UF

Elias G. Eldayrie
Vice President & CIO

WELCOME

Information Technology is at the forefront of university transformation. Whether the initiative is amplifying online teaching delivery or improving the university's data repository, UFIT is committed to guiding and enabling the university to thrive through transformative change.

We are pursuing historic transformation with the Empowering UF program now underway. Empowering UF takes UF from its highly customized PeopleSoft environment to the new Workday cloud environment, creating and standardizing process efficiencies across the university, affiliates, and direct support organizations for the first time.
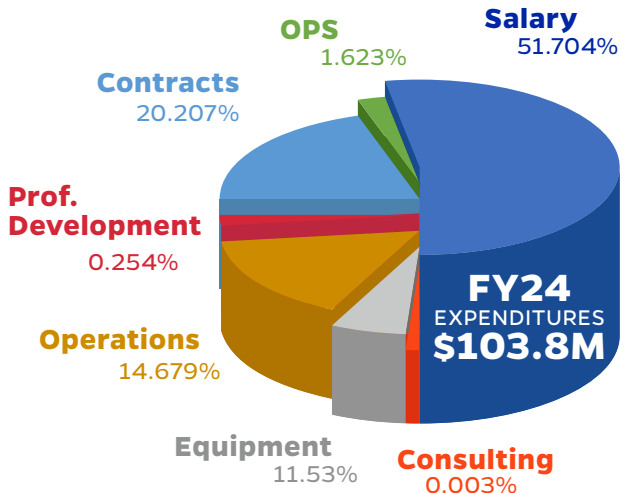
Transforming our data strategy and the analytics environment is as crucial for the university's future as the move to Workday. This effort of transformation is rooted in treating data like a strategic asset. The key to the university's success and growth is to create an accessible modern analytics environment, provide common definitions so that we all understand what the data means and use it the same way, and equip everyone with interactive dashboards.

HiPerGator, the university's supercomputer, propels exploration and discovery through data computation and facilitates transformative research results. The university prioritized strategic funding to hire and onboard a new team of research software engineers who will enable UFIT to support more large-scale calculations moving forward, pursue new research opportunities, and enhance the university's global impact.

UF is the AI university, leading the way with AI innovation in the classroom and in how the university conducts business. In FY24, UFIT released a centrally supported set of generative AI tools and provided expert consultations and more than 30 sessions of AI training for teaching, learning, research use, and staff education. We partnered with the Faculty Senate IT Committee to establish a set of guidelines for the ethical use of AI services. Our staff also developed a generative AI toolbox for faculty with complex analytic needs and upheld our commitment to a resilient cybersecurity environment by operationalizing the suite of advanced security programs through our Microsoft 365 licensing.

As the university rapidly transforms, UFIT continues to take on new opportunities and enable a new era of innovation.

Go Gators,

OPS
1.623%

Salary
51.704%

Contracts
20.207%

Prof. Development
0.254%

FY24 EXPENDITURES $103.8M

Operations
14.679%

Equipment
11.53%

Consulting
0.003%

ENABLE STUDENT SUCCESS

OBJECTIVE – Amplify the distinctive and exceptional qualities of the student academic experience at the University of Florida through a rich and flexible technology environment.

- Served the diverse digital media needs across the university by producing 1,353 visually engaging videos to support course content
- Demonstrated continued commitment to an accessible learning environment by captioning 6,025 videos displayed in the university's Mediasite platform
- Enhanced the digital learning environment by reviewing and integrating 23 learning tools into the Canvas learning management system

OBJECTIVE – Promote student success by expanding access, closing the digital divide, and providing tools and technologies for education that translate to advanced achievement as a student and after graduation.

- Increased instructional design consultations and workshop engagements for faculty and students by 164% in FY24
- Deployed performance enhancements to the Student Quick View Dashboard, providing advisors a one-stop overview of a student's academic record
- Collaborated with UF Bursar to implement Flywire Collections Management, providing students with a payment plan option for tuition and fee payments

OBJECTIVE – Advance innovative pedagogies and the success of all students through an accessible, state-of-the-art teaching and learning ecosystem and dedicated faculty support.

- Supported faculty innovation through 136 consultations exploring successful AI-integration strategies
- Developed the Gradescope pilot service for AI-assisted grading utilized for 53 courses, 7,743 active students, and 128,950 assignment submissions
- Implemented the Feedback Fruits Group Member Evaluation tool empowering 9,492 active students to engage in self-regulated learning more effectively

The rapid advancements and availability of generative AI have transformed the higher education environment, dramatically changing faculty and student interactions. As UF embraces the AI revolution, UFIT staff are collaborating with campus units to find innovative solutions to integrate AI into teaching and learning.

Through a series of Tech Byte events, the annual TechXploration, and partnership with UF's Center for Teaching Excellence (CTE), UFIT staff successfully engaged more than 900 participants across all 16 colleges to explore AI's intersection with learning and available resources to discover and adopt new teaching methodologies, significantly enhancing the educational experience. In further partnership with CTE, our staff assisted in the launch of the AI Teaching and Learning Awards, honoring six faculty members for their exemplary integration of AI into their curricula.

1 Inattention
"I don't have the time to learn about AI, and it's too hard to use anyways"

2 Rejection
"AI is just for cheaters and needs to be stopped."

3 Experimentation
"Oh wow, this is going to save me so much time!"

4 Integration
"It is important to know how AI can help you get started on your assignments, but it won't get you a passing grade."

5 Transformation
"This learning experience will show how AI has changed the way that we work and solve problems."

The Five Stages of AI Grief, presented by UFIT staff at the 2024 CTE Interface Teaching Conference

As UF's faculty explored the expanding horizon of AI-assisted learning tools, UFIT held 136 consultations to discover, review, and facilitate the adoption of these new tools. These consultations resulted in a handful of pilot programs leading to direct AI integration across academic disciplines, such as UFIT's contributions assisting the Department of Psychology's design of a new legal psychology course that utilizes custom AI chatbots allowing students to interview potential jurors and experience the voir dire process. UFIT also collaborated in the development and evaluation of prompts that produced high-quality AI-generated multiple-choice questions to streamline the creation of effective practice exams for College of Dentistry students.

UFIT released multiple generative AI services for the university community this Spring. These AI services, which include UF GPT: Microsoft Copilot and NaviGator AI, enable our academic community to experiment with generative AI utilizing both local and cloud-based models. These innovative services are designed to empower our academic community by facilitating the adoption of AI technologies, thereby bridging the digital divide, optimizing learning outcomes, and helping prepare students for an evolving workforce impacted by AI.

SPOTLIGHT: GENERATIVE AI FOR TEACHING + LEARNING

OBJECTIVE – Create a high-performance computing ecosystem for everyone in the university community.

- Supported 6,687 UF researchers from 174 UF departments and 1,122 Principal Investigators use HiPerGator, processing 33,780,362 research requests

- Deployed a new system designed to build and initiate digital twins, supporting faculty across different disciplines, including IFAS and the College of Medicine

- Initiated the acquisition process to bring the latest technology to HiPerGator and provide the university community with the latest GPUs from NVIDIA

OBJECTIVE – Lead in Artificial Intelligence through access and inclusion, amplifying and accelerating research outcomes for maximum societal benefit.

- Provided teaching support by allocating HiPerGator resources for more than 70 courses, totaling more than 2,000 students, since Fall 2023

- Facilitated collaboration through the NVIDIA AI Technology Center (NVAITC), resulting in 14 completed projects and 44 accepted journal publications

- Released UFIT's introductory Practicum AI course series to be accessible to the UF community and members of the general public

OBJECTIVE – Enhance faculty productivity through a high-powered and secure research experience that magnifies impact and enables collaboration.

- Expanded research support to assist faculty and researchers develop and implement solutions to address complex research and data management needs

- Maintained annual HITRUST re-certification for HiPerGator, enabling high performance and AI research using restricted data

- Launched an AI application toolkit that connects faculty with complex computational needs to explore available AI tools

## DESIGNING AND PLANNING FOR HIPERGATOR 4.0

Hero-Runs

HiPerGator, the university's supercomputer, is the fastest supercomputer owned and operated by a U.S. university. It has become integral to UF's research activities, providing robust, high-performance computing infrastructure that empowers researchers to conduct wide-ranging analyses quickly.

> **MORE THAN $400 MILLION IN GRANT DOLLARS SUPPORTED BY HIPERGATOR**

The upgrades completed by UFIT staff in 2021 enabled HiPerGator to be the linchpin of UF's "AI across the discipline" initiative. This evolution resulted in a series of "hero-runs" — computational projects requiring large fractions of HiPerGator (more than 32 GPUs) — which requires extensive planning to train AI algorithms on big datasets.

Ph.D. student Jinze Xue and Dr. Adrian Roitberg, V.T. and Louise Jackson Professor in UF's Department of Chemistry, and his research group conducted large-scale early Earth chemistry experiments on 1000 GPUs on HiPerGator-AI with 22 million atoms in an effort to prove if "molecules of life" could form in the natural environment.

"Our previous success in molecular dynamics enabled us to use ML [machine learning]/AI to calculate energies and forces on molecular systems, with results that are identical to those of high-level quantum chemistry," said Dr. Roitberg. *"But now we can do them around one million times faster! These questions have been asked before, but due to computational limitations, previous calculations used small numbers of atoms and could not explore the range of time needed to obtain results. But with HiPerGator, we can do it!"*
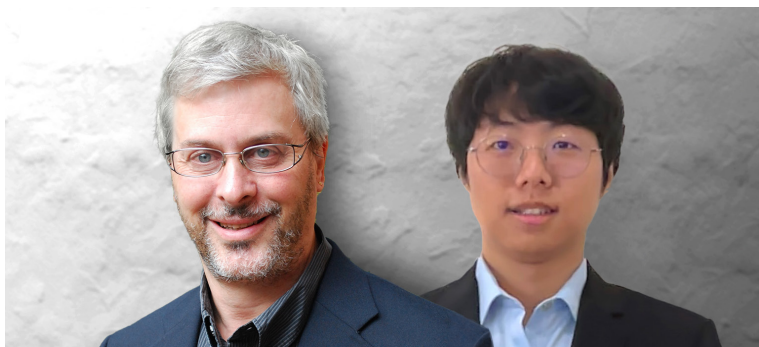
Expanding Research Support

UFIT hired a team of research software engineers to support more hero-runs and enable additional great discoveries. Since January, five engineers have been hired and are already contributing to various faculty research projects. They will work with faculty-led research groups and collaboration teams to help build the complex software required to process data, run simulations, and train and deploy large AI models.

OBJECTIVE – Strengthen university data governance and enable data sharing that builds stronger analytics and increases fundraising performance.

- Created new data literacy training courses designed to empower staff to be data curious and learn how best to communicate data results
- Facilitated the Data Governance Council to promote cross-unit data policy reviews and conversations regarding active data catalogs

OBJECTIVE – Enable a technology ecosystem that creates a world-class constituent experience that is integrated, dynamic, responsive, and personalized.

- Collaborated with UF Advancement (UFA) to review data policies and sharing agreements, and explore best practices of data governance and data management
- Supported UFA staff as they adapted new processes associated with central IT, ensuring a smooth transition with minimal disruptions to business operations
- Implemented UFA's App Connect Enterprise (ACE), which facilitates precise reporting of Academic Organization and Fund information

OBJECTIVE – Leverage integrated technology platforms to create meaningful communities, share stories of impact, and inspire investment in the University of Florida.

- Enabled UFA to seamlessly leverage real-time data when creating curated communications toward current and prospective university donors
- Executed data integrations to reflect all awarded degrees, ensuring that UFA's alumni information is up-to-date and enhancing engagement efforts
- Utilized platform integrations to allow for the automated processing of donations, gifts and records, transactions, and donor information

UFA's Advancement Engine Next project set out to reimagine the way the organization served university stakeholders through its databases, constituent relationship management (CRM), and reporting tools. The platforms and tools UFA previously utilized had been heavily customized to meet demand as the organization's needs evolved. These customizations still required staff to complete updates and processes manually. Through an initial planning process and expanding partnership, UFIT has supported UFA by providing technical resources to assist with application-to-application data integration, collaborating on data warehousing and reporting strategies, and onboarding staff to UF's technology platforms.

FY24's data integrations significantly enhanced UFA's business processes by ensuring data accuracy and improving team capabilities. UFIT staff provided essential support during the transition to the new IT systems. These efforts collectively contributed to more efficient and reliable operations, supporting UFA's overall mission and goals. By integrating UFA's infrastructure and modernizing its CRM, there is also substantially reduced risk that previously stemmed from managing redundant platforms. The effort to rationalize infrastructure provides a stable, scalable, and robust delivery of services and ensures stability and business process continuity.
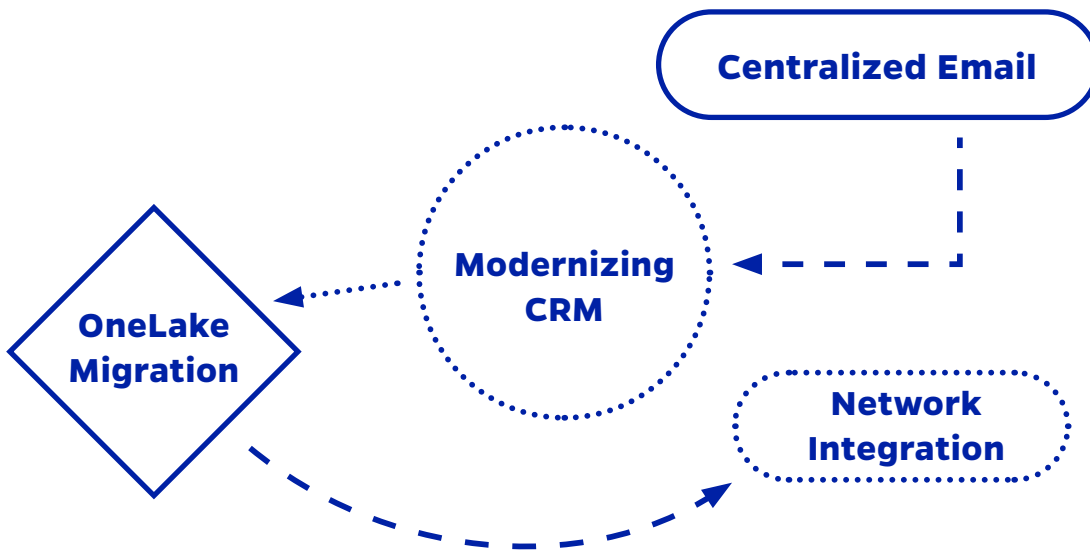
"Our AEN project was a monumental undertaking," said Gabrielle Sanders, UFA's Senior Director of Development Information Systems. *"The success we achieved is a testament to the exceptional efforts of UFIT and its partnership with UFA. UFIT demonstrated responsiveness by quickly addressing all our ACE issues and questions, which allowed us to complete the priority gift integrations and be fully prepared for go-live. UFIT consistently stepped in to tackle questions or issues related to DataStage and OneLake, ensuring our progress in both areas. Their staff showed dedication to AEN by always quickly addressing my concerns, and we could not have completed this project without their invaluable assistance."*

SPOTLIGHT: INTEGRATING ADVANCEMENT INFRASTRUCTURE

OBJECTIVE – Advance universal design and a user-centered approach to technology services delivery for the institution's stakeholders.

- Collaborated with the Office of Strategic Communications & Marketing to launch the modernized and accessible UF Mercury web theme
- Implemented Scholarship Universe to streamline the approach for students to search and identify potential matches for scholarship opportunities
- Deployed upgrades to improve functionality of ONE.UF, allowing students to customize their digital workspace to their preferences

OBJECTIVE – Promote the University of Florida brand through the delivery of exceptional and accessible services and support from any place, at any time.

- Delivered support through 24/7 Help Desk availability, resolving 86% of tickets on first contact and earning a 4.84/5 customer satisfaction score for FY24
- Collected student feedback to inform future development cycles for ONE.UF and the UF Mobile app via surveys, focus groups, and user testing sessions

OBJECTIVE – Extend an integrated and holistic UF identity and experience with harmonized technological processes and resources.

- Refreshed 4,273 access points across campus to provide a seamless wireless connectivity experience in high-traffic campus areas and student dorms
- Streamlined the configuration process for students in Division of Student Life residential buildings to connect their devices to the UF Network
- Bolstered the university's generative AI catalog with centrally supported services and accompanying training sessions

Since the launch of the NaviGator AI suite, 943 faculty, students, and staff have generated more than 3.4 million pages. If each page were a sheet of paper, the stack would be seven times taller than Century Tower!

Empowering UF

Empowering UF is a three-year project to implement Workday as the university's next ERP system. Workday, a cloud-based system, will succeed PeopleSoft, a heavily customized on-premises environment in operation since 2004. This ambitious and transformative initiative began in 2022 to modernize and unify business processes and administrative systems across the university that will support ERP needs for 20 years, permanently changing the way UF conducts business. The ERP system supports mission-critical operations, such as payroll, financial accounting, human resources, and post-award grant management.

The transition to Workday is designed to fulfill the UF Board of Trustees' "One UF" vision, bringing all UF academic colleges, administrative units, and component units into a unified platform. Activities in FY24 focused on critical preparation activities, including business process mapping, data conversion and reporting requirements, and finalizing the procurement process. Workday was selected as the ERP product solution, and UF contracted with Deloitte as our implementation partner.

Our success depends upon people as much — if not more — than building the system itself. Representation from throughout the UF community, including our component units, will be critical to ensure a comprehensive understanding of our university's business, data, and technology needs.

Elevating the Campus Wireless Experience

The upgrade of the university's network backbone to 800 Gigabit (UFNet3) dramatically boosts the capacity and performance of the network infrastructure. This effort advances the university's goals of promoting remote work and learning, enhancing collaboration, and elevating the stakeholder experience. This enhanced connectivity empowers stakeholders with increased bandwidth, improved efficiency, and seamless access to online resources and collaboration tools in campus buildings and across outdoor open areas, such as Turlington Plaza and Plaza of the Americas.

SPOTLIGHT: EMPOWERING UF & ENHANCING UF'S WIRELESS EXPERIENCE

OBJECTIVE – Build a shared resource for institutional and unit data related to the business of the university.

- Enabled access to the UF OneLake for more than 27 departments and colleges on campus, fostering a modern data framework for improved data access

- Migrated Finance, Sponsored Programs, and Student Life reports from the legacy warehouse to the UF OneLake for improved performance

- Enhanced infrastructure to be optimized for analytics by migrating more than 50% of data warehousing operations to the UF OneLake

OBJECTIVE – Cultivate a culture of shared responsibility, data stewardship, and data-informed decision-making.

- Conducted the application administration, data migrations, and data integrations to increase UF's efficiency while also reducing technical debt

- Collaborated with UFHR to release a suite of training as part of an initiative to promote data literacy and increase campuswide data stewardship

- Deployed enhancements to the Comprehensive Financial Suite of Reports to enable more robust reporting across primary financial reports for campus

OBJECTIVE – Amplify outcomes across the teaching, research, and service missions of the institution through analytics and data reporting.

- Identified significant performance improvements, such as a 99.7% increase in Finance's reports compute speed, after UF OneLake migration

- Upgraded Enterprise Analytics to newer, long-term release with improved interface, enhanced dashboarding capabilities and upgraded Natural Language Processing (NLP)

- Reduced monthly campus report build time by several hours through UF OneLake batch optimization

As the university continues its digital transformation path, UFIT is at the forefront with the implementation of the OneLake Data Hub. Powered by Snowflake software, the behind-the-scenes tool is providing UF with a more efficient and organized way to store, share, and learn from our data. This will enable the university community to mobilize their data queries so that the data is easier to use and share. The OneLake Data Hub can be accessed by many tools used for reporting, analytics, data engineering, and data science.

EFFECTIVE STORAGE COMPRESSION

UFIT collaborated with UF Finance and Accounting to complete the initial phase of moving financial reports into the Data Hub. Staff who work in the university's financial and accounting environment saw significant performance improvements, with one report documenting a 99.7% increase in computing speed over the previous data warehouse product.

"We've seen huge improvements in the run times of many of the reports we run regularly, which makes our jobs so much easier," said Adam Kadlec, accounting specialist in the Division of Student Life. *"Reports that were taking several minutes are generated and ready for me to use in seconds now."*

DECREASING PROCESSING TIMES

As UFIT makes progress transitioning campus units into OneLake, our staff are actively conducting application administration, migrating data, implementing data management processes, and configuring data integrations to increase the university's efficiency while reclaiming storage and reducing infrastructure costs.

"We're excited to continue building upon the success of this implementation," said UFIT Director Jim Freymann. *"This tool and others coming are crucial elements of UF's data strategy to move the university forward in predictive analytics and data-driven decision-making. The Data Hub environment will also actively support the university's increasing use of AI applications with its data."*

REDUCING TECHNICAL DEBT

OneLake will replace UF's existing warehouse and data shares within the next three years, and the service will become more widely available over the next few years with training options for new service users.

SPOTLIGHT: IMPLEMENTATION OF ONELAKE

OBJECTIVE – Advance institutional missions through an integrative and holistic approach to risk management with user-centered and outcome-oriented solutions.

- Maintained and added 105 new Fast Path Solutions (FPS), which are pre-vetted software and computing infrastructure solutions for UF faculty and staff
- Conducted 1,101 initial information system risk assessments and 1,430 reassessments to preemptively identify potential risks and evaluate the product compatibility
- Facilitated Integrated Risk Management workflow, Streamlining the processing of UF Procurement contractual documents, and completed 2,753 commodity approvals

OBJECTIVE – Leverage automation to make timely, data-driven, context-aware decisions that minimize impacts of adverse events to the university's core mission.

- Developed automated scripted processes to provide OneIT Leaders and distributed IT staff with visibility into vulnerabilities in their own IT assets
- Enhanced host-based forensics of Windows workstations and servers using a Linux forensics examination platform
- Redesigned the FPS and UF Data Guide websites to allow for automated maintenance and improved functionality for faculty and staff

OBJECTIVE – Enable innovation by providing secure environments, promoting a risk-aware culture, and building a resilient and flexible cybersecurity environment.

- Co-sponsored the Florida Cyber Bowl in which 10 Florida universities compete in an online quiz game to increase awareness about social engineering
- Promoted the *Information Security Awareness* training through campuswide communications, resulting in 18,904 faculty and staff completing the training
- Received 60,686 reports sent to **abuse@ufl.edu** and investigated 367 compromised user accounts

RESPOND
RECOVER
IDENTIFY
UF
CYBERSECURITY
FRAMEWORK
DETECT
PROTECT
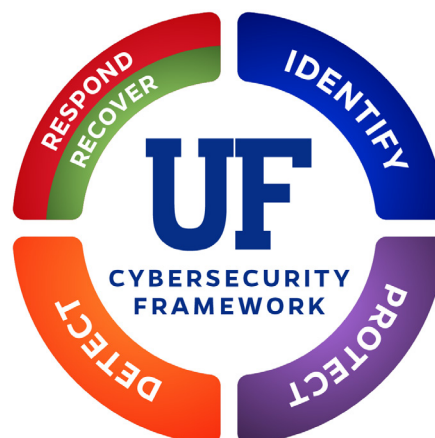
Microsoft Defender

UFIT began operationalizing the suite of advanced security applications available through the university's Microsoft A5 licensing agreement in FY24 to enhance system attack detection, investigation, and response across endpoints and improve UFIT's identification capabilities of sensitive information shared outside the university organization.

TRACKING DEFENDER DEPLOYMENT

2024 DATA COLLECTION DATES
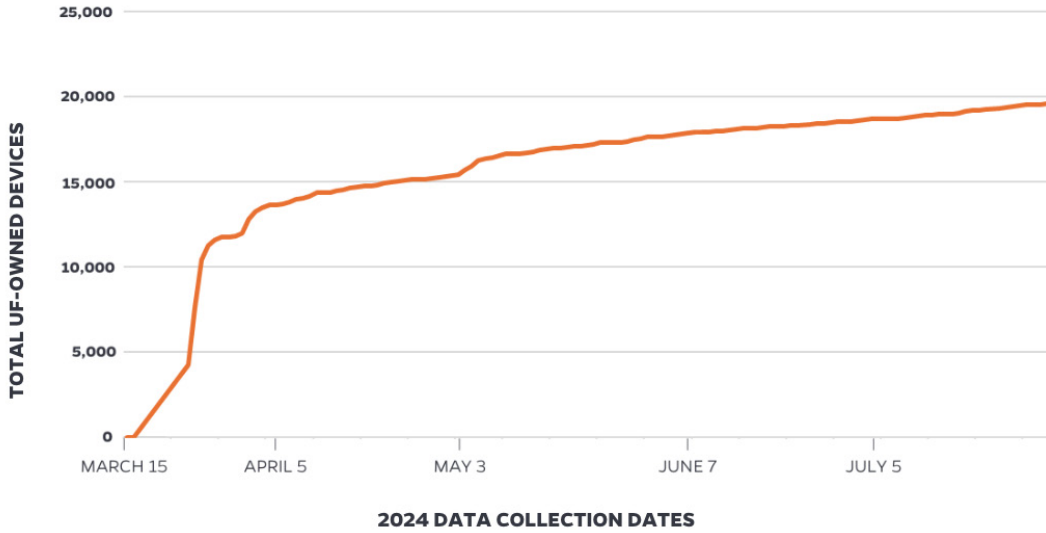
UFIT significantly improved the university's cybersecurity defenses and posture by dedicating resources to deploying Microsoft Defender's EDR to more than 19,500 devices in FY24. EDR builds on UFIT's current network-based threat detection capabilities by providing visibility into critical vulnerabilities and threats that are not detectable at the network level, allowing our staff to detect and resolve vulnerabilities and threats quickly.

University Security Plan Policies

The Information Security Plan Policy was implemented to improve the security of university data and information systems through consistent information security practices and identification of the roles responsible for developing, approving, and implementing these practices. The policy requires campus units that manage some aspect of their own technology infrastructure to be responsible for creating and maintaining an information security plan.

UFIT developed Information Security Plan specification files and a template that work as a guideline to define and improve cybersecurity practices that units implement. The four specification files — Identify, Protect, Detect, and Respond & Recover — were created in alignment with the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF) and are now accessible to campus units.

SPOTLIGHT: DEFENDER DEPLOYMENT & SECURITY GUIDELINES