I am excited to present the 2021–2022 Office of Information Technology Annual Report.

The prior academic year was full of accomplishments that range from improved classroom experiences to major investments in network and research infrastructure. The focus, both in effort and investment, was to address the post-pandemic transformation, where the campus returned to in-person instruction, but with a larger offering of blended and online learning. The investments in Active Learning and Hyflex classrooms reflect that change.

In addition, the investments in higher bandwidth for education and research activities underscore the growing research productivity and an increased demand for on-campus housing. Activities that support student success and the continued improvement in state and federal metrics are highlighted in the work of IEA and the many support units throughout the department.

I want to extend my heartfelt thanks to the OIT team for all they do to support the operational and strategic needs of the University.
ADMINISTRATIVE SYSTEMS: REORGANIZING TO EMBRACE UNIVERSITY-WIDE CHALLENGES

The Office of Administrative Systems underwent major organizational changes in the 2021–2022 fiscal year.

- The Director of Administrative Systems retired in June 2022.
- Workday Operations moved to OIT in November 2021.
- Student Financial Information Services (SFIS) moved to OIT in February 2022.
- The software development and integration Agile teams were merged into a single team composed of five programmer analysts, one software architect, and one product owner. The objective was to increase work output, strengthen cross-training between developers, and better prioritize software development and integration projects.

A one-year success plan was put into effect in May 2022.

Talent was moved to different areas within the organization, and a more global approach was taken toward supporting all of OIT as well as outside stakeholders. Below are some high-level details of the plan:

- Create a Value Management Office (VMO) that shifts the OIT organization to one project management practice
- Build a new Enterprise Applications team that manages the environment for applications throughout OIT, starting with all custom applications, and develops new talent that can own many SaaS and On-Premise applications
- Move Workday Operations and the Student Information Systems team to using more Scrum-like methodologies, following good Agile practices and allowing centralization and visualization of the work
- Re-align responsibilities for the Software Development and Integrations team, with less operational work and more project/development work
- Establish permanent Workday Operations leadership

PROFILE PROJECT: IMPLEMENTATION OF GRADCAS

GradCAS, a new online Customer Relationship Management (CRM) application for graduate programs, was deployed for prospects applying through the FAU Graduate College.

This implementation enhances communication and the decision process for moving prospects through the Admissions funnel. It provides a brand-new online application for graduate prospects, advanced tracking, improved reporting overall, and also enhanced communications with prospective graduate students. The solution was deployed and integrated into the Banner Student Information System.

- Prospects applying to the Graduate College have an admissions portal with a modernized look and feel.
- New integrations to Banner were created to move decisioned prospects to the Banner Student Information System.
- Report generation has been improved and can now be done entirely in the CRM system, as opposed to using several tools and requiring advanced reporting skills.
INFRASTRUCTURE: NETWORK EXPANSION AND IMPROVEMENTS

Network expansion and improvements continued in 2021 and 2022 with a focus on new high-speed 100 Gig connections as the demand for bandwidth-rich services increased across the University. Several core devices were upgraded as the future strategy moves toward 100 Gig connectivity throughout the network backbone. Multiple core MPLS routers were outfitted with new hardware and the core data center routers were upgraded to fully support 100 Gig connections.

The Jupiter campus continues to grow with the new Stiles–Nicholson Brain Institute research building along with new growth in high-performance computing. The Jupiter core was upgraded with new high-performance hardware that delivers 100 and 40 Gig connections to support these new initiatives. The new high-performance core routers across the University further strengthen the network and provide the foundation for future high-speed and high-performance initiatives.

The FAU utility network supporting multiple building automation systems has experienced over 200% growth this year alone. This allows the University to maximize efficiency of its infrastructure to reduce waste and increase redundancy with 24x7x365 monitoring.

The Academic network, originally deployed in 2018 to support the extended needs of graduate research, has grown 20% every year. This research-focused network is now deployed in strategic locations throughout the campus.

Wireless Network

Wireless connectivity continues to expand on campus as the demand for cloud-based applications and network-driven services increases at a rapid pace. All new access points installed at FAU are compatible with the new Wi-Fi 6 technology which offers significant speed increases to all compatible clients. Over 600 new access points were installed in the new residential buildings, Atlantic Park Towers in Boca Raton and Residence Hall III in Jupiter, to improve the wireless footprint.

The number of wireless devices on campus continues to expand rapidly across the FAU student, faculty, and staff population. During the last year, wireless users transferred over 14 PB of data and the daily concurrent wireless client count surpassed 22,000 clients.

Several new improvements will be coming to FAU next year as wireless technology continues to advance. The new and even faster Wi-Fi standard, known as Wi-Fi 6E, is now available. All new access points will have this high-speed wireless technology built in.
In conjunction with the tremendous growth of technology at FAU, the Enterprise Systems team has seen a 20% growth in the number of virtual machines with 140 new systems deployed this year, bringing the total number of systems to over 700. Storage remains steady at 1.40 PiB with new demands for additional capacity and new virtual machines with every project. Email surpassed 278 million messages with 248 million messages successfully blocked as spam or impersonation attempts.

2021 was an important turning point for the FAU telecommunications department. The final telephone was removed from the 30-year-old system, and the antiquated hardware was finally retired. The complete project required porting over 10,000 numbers and individually reprogramming 5,000 lines. Almost every department within OIT assisted with the project, which touched every building across all campuses. The new telephone system processed over 1.63 million inbound calls to the University and 3.45 million total calls during the past year. The total talk time exceeded 4,200 days.

As FAU continues to grow in key areas of research and expand in new and innovative ways, the University IT infrastructure is also growing to support the strategic initiatives of the institution. Building upon the solid foundation put in place over the past several years, the infrastructure team will soon have increased 100 Gig capacity throughout the data center. This will significantly strengthen the infrastructure at FAU and open the doors to new high-speed research initiatives.
ENTERPRISE SUPPORT & CLIENT ENGAGEMENT: BUILDING A COHESIVE STUDENT COMMUNICATION STRATEGY

From admission to graduation, students must navigate a maze of requirements each semester that could derail their path to graduation.

Students need timely communication to prompt them to complete required tasks, such as registering for courses, resolving holds, and maintaining financial aid. In July 2021, Enterprise Support & Client Engagement partnered with key stakeholders in the Office of the Registrar, Student Advising, Tuition and Billing, New Student Orientation, and Financial Aid to build a cohesive communication strategy using the University’s Customer Relationship Management (CRM) system.

- The CRM system is used to attract, engage, and communicate effectively with students at the different points of the student lifecycle, from initial application all the way to graduation.
- The CRM’s automation tools reduce time spent on unnecessary administrative tasks, such as manually sending emails and building lists, allowing staff to focus on more significant interpersonal communication and tasks.
- CRM data is visible cross-departmentally, so everyone who interacts with a student can view and log information about the student’s holistic experience.
- An official University-branded template for internal communication was developed so emails sent from the various University departments to students have a consistent look and feel.
- A stakeholder dashboard was built for quick high-level reporting metrics and monitoring the effectiveness of all student communications.

OTHER ACCOMPLISHMENTS

- Marketing Cloud was implemented to work with Salesforce to document current student communication.
- A student communications strategy was developed that empowered FAU to craft strong, clear messages to students during COVID-19.
- The Starfish nightly data load process was tweaked, and processing speed decreased from 12 hours to under 30 minutes.
- MYFAU introduced the Health and Wellness module in collaboration with the Owl Care Health department to help returning students and staff find resources that support their mental and physical well-being.
DATA & REPORTING SERVICES:
STREAMLINING PROCESSES & IMPROVING EFFICIENCY

Developing a New Admissions Data File

The Florida Board of Governors (BOG) requires FAU to provide a detailed data file about applicants to the University in the Summer, Fall, and Spring terms each year. This ADM file includes more than 80 data attributes for each applicant, some involving complex business logic to derive, and the data must follow strict data quality requirements defined by the BOG.

The existing process to create the ADM file was developed more than 10 years ago. The process had become difficult to troubleshoot when data problems arose and difficult to modify when the BOG requirements changed each year. The immediate benefit of creating a new process was to make it easier and less time consuming to prepare and submit the ADM file each semester. This would free up staff time to do other important work.

Data & Reporting Services collaborated on the new process with the group that prepares the ADM file each semester, including Undergraduate Admissions, Institutional Effectiveness and Analysis (IEA), and Administrative Systems. The new process was used successfully for the first time to create the Summer 2022 Admissions file submission.

“The new process has improved data quality, reduced the volume of manual corrections applied to the Admissions file and allowed for faster implementation of annual changes required by the Board of Governors.”
— Etina Qirjo
Associate Director
FAU Admissions

OTHER PROJECTS OF NOTE

Executive Education Operations Reports: Created a series of Power BI reports for Executive Education to assist them in their operations for admissions, advising, student progress toward degree, and billing/invoicing; these reports increased efficiency and were less time consuming.

Clean-Up of Inactive OPS Positions: Worked with Human Resources and Workday Operations on a process to identify OPS positions that are active in Workday but have no work assignment associated. These positions are now placed in an “Inactive” organization, which makes it much easier to clean files up so that worker headcount reports are more accurate.

InPlace Student Placement: Developed a process with the School of Social Work to load student data files to InPlace, a software that helps manage the placement and progress of students in internships; previously the data was being loaded manually and not all data was being added to the system.
INSTITUTIONAL EFFECTIVENESS & ANALYSIS: POWERING UP WITH DASHBOARDS

OTHER ACCOMPLISHMENTS

- Accurately tracked and projected Performance-Based Funding metrics, crucial for student success and budgeting planning
- Launched employee dashboards that provide campus users detailed data on both faculty and staff
- Successfully completed multiple rounds of College KPI Projects by working with the Provost’s Office, Colleges, and the OIT team with added new PBF metrics; this project supported College planning and goal-setting needs and further enhanced the culture of teaching excellence
- Accurately projected 2022 Enrollment targets and developed scenarios for 2023 and beyond for senior leadership for enrollment planning
- Successfully prepared reports for the three rounds of COVID HEERF funding, totaling $127 million
- Developed President/ELT dashboard for updating leadership on current status of key metrics
- Developed US News Undergraduate Ranking Estimator and Carnegie Classification dashboard
- Released Faculty 180 reporting pilot
- Supported Quality Enhancement Plan and its data reporting, required for accreditation purposes and very important for student success
- Major projects completed: 12
- Tickets completed: 225
- IEA Power BI page views: 26,488

US News Medical Schools Ranking Estimator

IEA developed a US News Medical Schools Ranking Estimator dashboard that provides an accurate estimation of FAU’s Medical School ranking with “what-if” parameters. Institutions that US News published as ties were also calculated with exact rank based on available data. This project benefits the College of Medicine’s strategic planning by helping the College direct resources to where the greatest return on investment can be realized.

OIT collaborated with the College of Medicine, Academic Affairs, and Finance for data collection and feedback. This long-term solution will be continuously maintained and updated for its performance.

US News Undergraduate Ranking Estimator

IEA created a what-if dashboard tool to allow users to put in scenarios and estimate ranking based on existing national data.

US News looks at a large collection of variables when ranking schools. Here are a few high-weighting indicators for FAU:

- 6-Year Graduation Rate
- First-Year Retention Rate
- Graduation Rate Performance
- Class Size
- Financial Resources

FAU strategically invested resources into areas that helped improve FAU’s 2023 rank among public institutions from 140 to 132.
RESEARCH COMPUTING:
OPTIMIZING RESEARCHERS’ ABILITY TO COMPETE FOR FUNDING OPPORTUNITIES

In the last year Research Computing coordinated with the FAU Colleges of Medicine, Engineering, and Science, among others, to enhance and improve FAU researchers’ ability to compete for funding and research opportunities. The following initiatives were among the largest and most impactful funding opportunities supported:

- **$5.3 Million NIH grant with the College of Nursing: In-Vehicle Sensors to Detect Cognitive Change in Older Drivers.**
- **$800,000 Carry Forward Grant with Division of Research and the College of Engineering for 2,560 cores and 9 A100 GPUs.** This expansion supports the College of Engineering and the University as a whole, providing Cluster and Virtualization Technology, replacing parts of the College of Engineering’s Virtualization Infrastructure.
- **Multimillion dollar collaboration with the Division of Research and College of Medicine for a Magnetic Resonance Imaging machine.**
- **$650,000 DoD Education grant with Dr. Hari Kalva of the College of Engineering to support Cloud First development in the College and University as a whole.**
- **$250,000 NIH grant with the College of Medicine to develop analytic solutions used to improve the delivery of health care to minorities.**
- **Creation of a Data Warehouse from eClinical Works with the College of Medicine.**

In-Vehicle Sensors to Detect Cognitive Change in Older Drivers is a $5.3 million, five-year study by the College of Nursing that will enroll more than 500 participants and follow them quarterly for three years. The project is in year 2 of the study and year 1 of data collection.

Research Computing enabled this project to move forward when outside vendors were unable to provide solutions in a timely manner, due to an increasingly difficult IT landscape of long lead times and modern security requirements.

OIT allocated 8 TB of high-speed storage to the project, 87.1% of which is being used. The project consists of 373,864 files, most of which are .asf videos. Using the BHRIC high-speed storage, Research Computing was able to get the project online in days and continued to assist by providing a secure server for the project’s Web dashboard. Authentication and authorization services were also provided, which helped researchers gain access to the data as quickly as possible.

“Research Computing provided assistance in managing, analyzing and storing the very large amount of sensor data, particularly the video data, that was beyond the capacity of our Colleges to handle. They have worked closely with us in designing and setting up a system that can handle the data but is within our budget. Their intervention was a lifesafer!”

— Dr. Ruth Tappen
Christine E. Lynn Eminent Scholar & Professor
Christine E. Lynn College of Nursing
Harbor Branch Oceanographic Institute (HBOI) IT helps researchers focus on their research without worrying about the practical aspects of managing data storage. In the past year, HBOI IT reorganized over 320 TB of research data to make the data easier to manage. Large datasets were assigned categories, and disaster recovery methods were changed, based on those categories.

As huge data sets have become increasingly routine and necessary, quotas have also become essential.

HBOI IT set up a new server architecture that allows researchers to free up space from their storage quotas simply by moving files to an “archive” system, thus enabling researchers to self-manage their data. This new setup allows for 100 TB of current project data and 200 TB of past projects or data that does not regularly change.

This joint NSF/CSBR-funded project preserves digitized data, images, and videos from hundreds of dive sites visited with the Johnson Sea Link submersibles over a 45-year period. Researchers viewed, annotated,

HARBOR BRANCH OCEANOGRAPHIC INSTITUTE: PRACTICAL IT SOLUTIONS FOR MARINE SCIENTISTS

Natural History: Augmentation of the HBOI Marine Biotechnology Reference Collection to Enhance Accessibility and Use by a Broader Scientific Community

WHAT IS THE IMPACT ON INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?
THE PROJECT WILL IMPROVE HBOI-FAU CYBERINFRASTRUCTURE: PRESERVING DIGITIZED DATA, IMAGES, AND VIDEOS OF A UNIQUE COLLECTION OF DEEPWATER ORGANISMS AND MAKING THIS DATA PUBLICLY AVAILABLE.

HBOI IT and edited more than 12,176 video files and 19,890 images, many in various stages of deterioration. Investigators included early career scientists and a graduate student in videotape annotation, introducing them to deepwater environments and organisms.

Project videos shared in public lectures reinforce the value of exploration, documentation, and
conservation of unique habitats that few will ever visit. Web-accessible products developed in the project for a collection of specimens and associated data, images, and videos are readily available to professionals and students who will benefit from their use in the fields of marine biodiversity, systematics, marine natural product discovery/chemical ecology, and oceans and human health.

These products will also advance discovery and understanding while promoting teaching, training, and learning in basic and interdisciplinary research and the preparation of students in a variety of STEM fields. The digitization, computing, and video-editing equipment purchased with this grant will be made available for use in digitization of collections and other data.

The final process of archiving this valuable information was facilitated by the FAU OIT team at the Jupiter campus, who moved over 100 TB onto a more robust server.

This project is a vital contribution to ocean literacy and an understanding of the amazing and diverse world we live in and the need to preserve tapes and specimens from historic dives.

CHALLENGES OF MANAGING MARINE RESEARCH DATA

- Researchers have time constraints on conducting their research and have limited time for data management.
- Data collected by researchers is often “their life’s work,” and they are very wary of deleting information once a project is finished. Legacy data often can be used for current projects.
- Long-term storage is a major issue due to the new era of huge data sets and the ease with which this data can now be collected.
- One recent four-year, $11 million contract with the US Office of Naval Research (ONR) required significant infrastructure changes.
INSTRUCTIONAL TECHNOLOGIES: SERVICES & SUPPORT

Instructional Technologies provides different types of services to ensure continuity of classroom instruction through technical support. These include Audiovisual Services, Canvas assistance, and software training for faculty and staff, as well as support for videoconferencing and lecture capture classes.

Audiovisual team services include daily support of classroom and conference room equipment and installation and integration services for numerous instructional projects. Audiovisual support is available upon request for many different types of University events.

The Office of Information Technology manages instructional facilities across all campuses that enhance FAU’s teaching and learning environment in specialized classrooms, instructional computer labs, open computer labs, and video conferencing facilities.

- Mediasite is licensed as FAU’s Lecture Capture platform and is currently available in over 55 classrooms and event spaces across all FAU campuses. Over 4,345 classroom recordings were captured with Mediasite.
- Faculty created over 3,768 personal videos in Mediasite Mosaic, which are typically used as content in Canvas courses.
- There were over 1,051,400 views in Mediasite of both classroom and individual content videos.

During the 2021–2022 academic year, the LMS team handled over 2,100 faculty help tickets and more than 480 student help requests.
ACTIVE LEARNING CLASSROOM ON THE BOCA RATON CAMPUS

The College of Science reached out to OIT for assistance creating a technology-enhanced active learning classroom. In an active learning classroom, students work in groups to engage in classroom activities centered around writing, talking, problem-solving, or reflecting. This type of environment encourages students to view and use lecture content in many different and creative ways.

The new technology installed in PS227 now facilitates this experience by allowing instructors and students to share content to any of the display screens around the entire room. The OIT Instructional Technologies team worked to design and install all of this active learning environment in the PS227 classroom on the Boca Raton campus.

Technical equipment available for use in PS227 includes an adjustable height teaching podium and an instructional computer with Smart Ink annotation software. The podium monitor functions in both normal and tablet mode, while a Crestron touch panel allows the instructor to manage the 10 digital displays that support wireless presentation around the room. There are also 10 adjacent wall-mounted whiteboards available for students to use during collaborative work.

Instructional Technologies conducted training sessions for College of Science faculty so they could become comfortable teaching in this new style of classroom. OIT is interested in partnering with other Colleges to design and install more active learning rooms, as budgets allow.
PARTNER CAMPUSES: EVENT SUPPORT AND CLASSROOM/FACILITY UPGRADES

In the past fiscal year, the Partner Campuses returned to hosting onsite and in-person events. Support was provided for more than 100 events for internal and external constituencies.

DAVIE CAMPUS: THE 24TH ANNUAL MU ALPHA THETA MATHEMATICS REGIONALS COMPETITION

Students from across South Florida came to the campus with their families to participate in this event, the largest math competition in Florida. Over 800 students representing high schools from Broward, Miami, and Palm Beach competed. For most, it was the first in-person competition since COVID.

JUPITER CAMPUS: ECONOMIC COUNCIL OF PALM BEACH COUNTY BOARD OF DIRECTORS MEETING

This event promoted prudent economic growth and improved quality of life in Palm Beach County, practicing the principles of good government and good citizenship. Guest speakers were Dr. John Kelly, FAU President, and Dr. Pat Griffin, Scientific Director, UF Scripps campus.

FORT LAUDERDALE CAMPUS: SIXTH ANNUAL (VI) BRAZIL–FLORIDA SUMMIT

This yearly event aims to strengthen the Brazilian and non-Brazilian business communities in Dade, Broward, and Palm Beach counties, where these leaders work to expand their businesses and create new revenue opportunities. This year’s event focused on the various current status and perspectives of startups.
As part of the move of the Graphic Design academic program to the Fort Lauderdale Campus, a new instructional computer classroom was created by combining several offices and rooms. Broward Technology Services (BTS) was involved in the design of the space, including selection of furniture, installation of AV components, network infrastructure, and setup of equipment.

**FORT LAUDERDALE CAMPUS:**
**GRAPHIC DESIGN DEPARTMENTAL INSTRUCTIONAL COMPUTER LAB**

ST-233 was fully upgraded with the latest technology, including Zoom-enabled technology, which allows the campus to increase its academic course offerings. BTS staff supports all courses using the new technology and trains faculty on how to use the equipment.

**DANIA BEACH CAMPUS:**
**ZOOM-ENABLED CLASSROOM ST-233**

ST-233 was fully upgraded with the latest technology, including Zoom-enabled technology, which allows the campus to increase its academic course offerings. BTS staff supports all courses using the new technology and trains faculty on how to use the equipment.

**JUPITER CAMPUS:**
**STILES–NICHOLSON BRAIN INSTITUTE**

Support was provided for network infrastructure and Telecom installation, workstation setup, and AV equipment and digital signage installation for the setup of the Stiles–Nicholson Brain Institute and dormitories.

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**Jupiter Campus**

18 e-Classrooms:
- AD Building: 103, 104, 202, 205, 206
- SR Building: 209, 258, 268, 269, 272, 278, 279, 275, 283
- HC Building: 102, 111, 114, 115

3 Videoconference Rooms:
- EC Building: 202C
- AD Building: 206
- SR Building: 123

Partially completed the upgrade of 5 classrooms:
- PC Building: 151, 158

**Fort Lauderdale Campus**

Plotter Printer: A state-of-the-art HP Z9 plotter printer with vertical trimmer was installed in the HEC-611 Main Open Computer Lab. It was configured to use the campus PaperCut pay-for-print system. The printer is widely used by Graphic Design and Architecture students and for printing posters for major departmental events.

3 e-Classrooms:
- HEC Building: 312, 1009, 1008i

Assisted with network infrastructure design for the Graphic Design and Multimedia move to HEC.

**Davie Campus**

All 41 e-classrooms were upgraded with new PCs for the instructor podium.

The following rooms/spaces were also upgraded:

17 e-Classrooms:
- DW Building: 110, 421
- LA Building: 124, 132, 139, 243, 339, 447

1 Auditorium
- LA Building: 120
- 4 Instructional Computer Labs
- LA Building: 303D, 303F
- ES Building: 105, 249

2 Multipurpose Spaces
- Student Union Building: SD-214 and second-floor Student Union study area

Coordinated the design and implementation of Davie LA Building second-floor switch closet.
The FAU Help Desk assists students, faculty, and staff with technical questions regarding personal computer system requirements, troubleshooting, and other technology issues.

For the period from July 2021 through June 2022, the Help Desk received:

- 15,471 calls, with an average wait time for the “Other” option of 48 sec
- 16,549 calls, with an average wait time for the “Log-in” option of 51 sec
- 358 calls that requested the “Call-back” option rather than waiting
- 32,378 total calls received, with a service level of 93.9%

The pie chart below shows the reasons why users called (by percentage), as selected by the technician. General information is often selected when the call does not fit any predetermined call option. “Other” includes calls related to Canvas, Desktop, Workday, and WiFi support, each of which was at or under 1% of total calls.

The “Transfer to Another Dept.” reason increased significantly from 18% in 2020–2021 to 28% for 2021–2022.

The log-in assistance options (“Forgot Password,” “Account Activation,” and “Duo Support”) all remained roughly the same.
VISIT OUR REDESIGNED AND UPDATED WEBSITE!

In the last fiscal year, OIT redesigned and launched a new website. This new site provides updated information about:

- OIT services
- Technology training sessions
- IT resources available online
- IEA dashboards
- Systems status
- News articles about current OIT projects

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