

# 2023-2024 ANNUAL REPORT



## CORE TECHNOLOGY SERVICES

Reporting Period: July 1, 2023 - June 30, 2024



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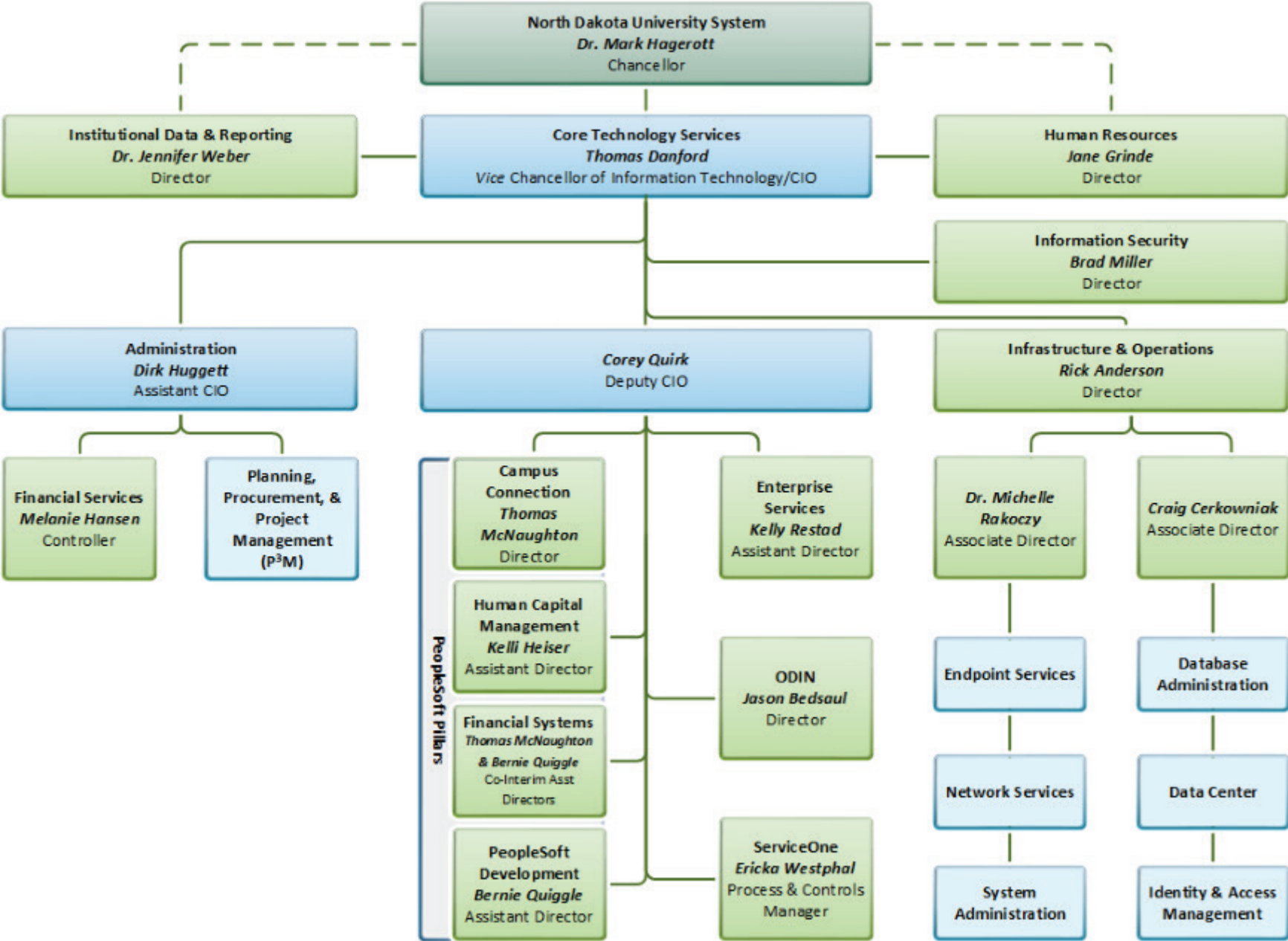
*This report was developed in accordance with N.D.C.C. §15-10-44.1.c. Integration of higher education information technology planning and reporting with the board's strategic planning process and annual performance and accountability report required by section 15-10-14.2.*



**CTS Vision**  
To foster an organizational culture that delivers exceptional service, secure infrastructure, and access to information.

**CTS Mission**  
To provide trusted technical and professional services to support the strategic goals of the North Dakota State Board of Higher Education.

# Core Technology Services Leadership Team



# OFFICE OF THE CIO

## A Message from the Vice Chancellor

Core Technology Services (CTS) is the technical arm of the North Dakota University System (NDUS) with goals and objectives that align with and support the strategic vision of the NDUS. The Office of the CIO (OCIO) works collaboratively with the CTS Leadership team and organizational staff to:

- Provide secure information management and technology services to the North Dakota University System.
- Link academic and business services within the NDUS community.
- Connect users to the information and educational resources they need to accomplish their goals.



**Corey Quirk**  
CTS Deputy CIO



**Dirk Huggett**  
CTS Assistant CIO

### OCIO - Staff Highlight

Dirk Huggett co-authored the Midwestern Higher Education Compact (MHEC) Technologies Community Paper, *Conveying the Value of Information Technology (IT): Highlighting IT's Strategic Role in Institutional Success*. The publication discusses the changes IT leaders need to make around the value of IT and its integration in the institution's core mission.



**Tom Danford**  
NDUS Vice Chancellor of  
Information Technology;  
CTS CIO

This report highlights the key accomplishments of Core Technology Services (CTS) during the past year, demonstrating the team's commitment to innovation, efficiency, and the success of NDUS institutions. Highlights of these efforts include:

**ERP Modernization:** A comprehensive market analysis of Higher Education ERP systems was completed, exploring key trends, challenges, opportunities, and emerging technologies. This analysis, conducted in close collaboration with the state, recommended that NDUS pursue ERP modernization with a full transition to the cloud by 2035. This strategic initiative will ensure the long-term efficiency and effectiveness of our core administrative systems.

**ServiceOne Continual Improvement:** Ongoing efforts to enhance ServiceOne included the creation of a new Process and Controls unit, implementation of continuous improvement methodologies, and the adoption of new best practices. These initiatives are focused on optimizing service delivery to NDUS institutions and enhancing user experience.

**ND SAMS (State Aid Management System):** This integrated scholarship management system was successfully implemented and now streamlines the management of eight distinct scholarship programs and consolidates data from three sources into a single system. This transition reduces the number of managed systems and creates a single portal for both institutions and students. ND SAMS has already disbursed over \$11.9 million, significantly improving the efficiency of awarding over \$20 million annually to North Dakota students.

**FAFSA Simplification:** The implementation of the FAFSA Simplification Act required significant effort from campus and CTS staff. These efforts streamlined the application process, improved the user experience, expanded Federal Pell Grant eligibility, and linked eligibility to family size and the federal poverty level.

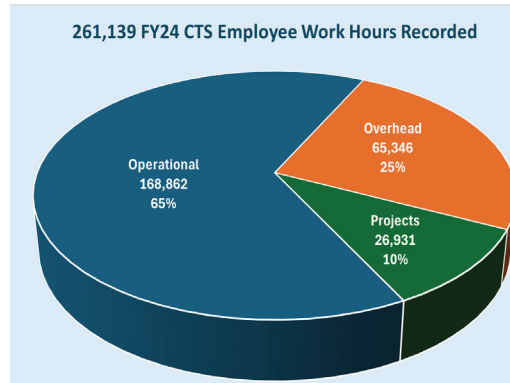
**NDUS Security Operations Center (SOC) improvements:** To better protect NDUS systems and data, increased monitoring to identify threats earlier and respond quicker has been made possible with additional analysts and increased automation.

These and other significant accomplishments are further detailed in this annual report. We invite you to read on and further explore those achievements.



# ADMINISTRATIVE SERVICES

Administrative Services consists of two major subdivisions, Financial Services and P3M. The department provides general administrative tasks and non-IT operational services for CTS, including financial, IT planning, procurement, and project management.



## P3/M

P3/M is responsible for issuing the mandated IT strategic plans and the CTS annual report, oversees all CTS procurement, and completes all procurements for purchases costing \$50,000+ for the organization. This team also manages some of the most complex NDUS projects and performs Major IT Project Oversight when CTS or institution project costs are forecasted to be \$500,000 or more.

## NDUS Legal Counsel Ticketing Portal

P3/M utilized the CTS Work Management System to develop a ticketing portal for non-UND/NDSU legal counsel requests. The portal allows campuses, CTS, and the System Office to submit requests to NDUS legal counsel and the ability to monitor the status of those requests. The system also enables legal counsel to manage incoming requests more efficiently and engage with requesters directly through the application, thereby streamlining the workflow process for legal requests.

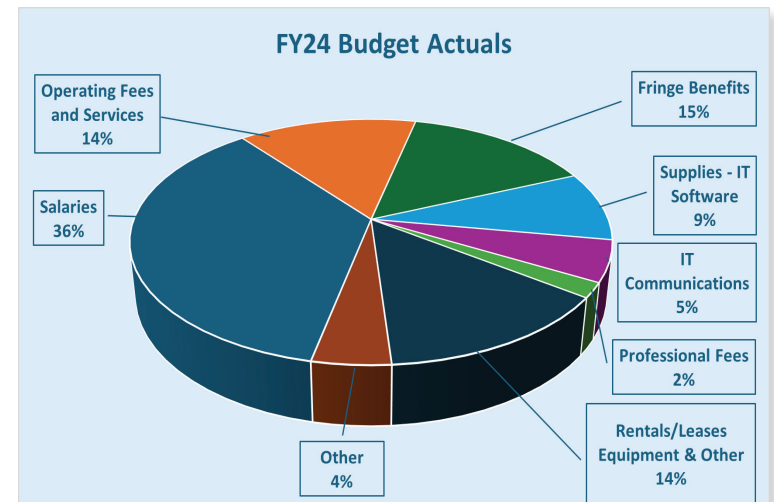
## Financial Services

The Financial Services department provides accounting services and financial support for the CTS organization. Key areas of responsibility include accounts payable and receivable, budgeting, cash flow, inventory/asset management, and financial reporting. The department manages an annual budget of \$38+ million.

Staff have focused on strengthening collaboration across departments, updating policies, and incorporating workflow automation into several financial processes to improve accuracy and timeliness. Collaborative work efforts included changes to inventory and asset management tracking and modifications to the travel and expense reimbursement process.

- Inventory and asset management processes have been revamped to ensure information for all phases of the lifecycle is stored in one location, contains consistent documentation, and is easily tracked.
- Extensive research and employee feedback helped develop a new travel policy with easy-to-understand guidance for employees. Travel accommodation responsibilities were shifted to Financial Services to facilitate quick processing of reimbursement requests while ensuring compliance with policies and procedures.

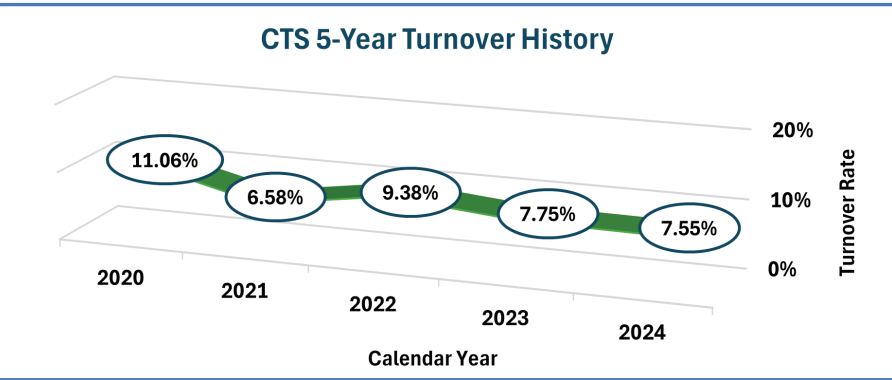
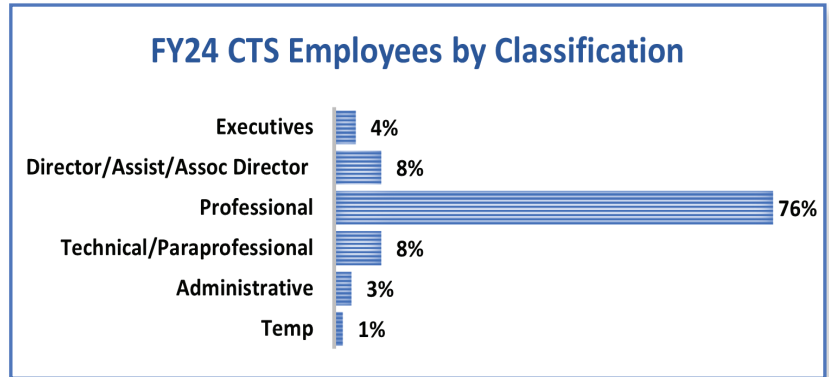
Strategic aspirations for the upcoming year include enhancing financial data analytics and developing a budget forecasting tool for departmental leaders. The tool will enable budget owners to simulate what-if scenarios using different revenue and expense factors to assess the potential effects on department budgets. Achieving these objectives will improve decision-making, identify risks more effectively, and offer more clarity for strategic planning purposes.





# OFFICE OF HUMAN RESOURCES

The Office of Human Resources (OHR) consists of one director and one part-time administrative support position to provide HR services to the staff and administrators of CTS and the System Office. These services include employee development and performance management, conflict resolution, salary administration, and daily HR functions. OHR assists administrators in the development and management of personnel policies and procedures, and provides coaching and mediation to supervisors and staff. OHR supports the mission of the NDUS and CTS by providing recruitment services that attract, develop, and retain a highly qualified and diverse workforce. The HR Director leads the NDUS Human Resource Council and advises the chancellor and SBHE on human resource issues, HR organizational policies and procedures, and assists with administration of the NDUS retirement plans.



## Positive Workplace Culture

CTS's most recent strategic plan highlights a commitment to fostering a positive workplace culture that values and supports employee well-being. To encourage a healthy work-life balance for all employees, CTS provides access to wellness programs, coordinates mental health awareness trainings, and offers flexible work arrangements. As part of this initiative, OHR has enhanced the CTS orientation program to help strengthen engagement and reduce isolation gaps for newly hired remote employees. Each quarter, new employees meet virtually with the Director of OHR to learn about each other's roles and ask questions regarding the organization. These gatherings help build connections among the new staff members, which has positively impacted employee engagement and retention.

## NDUS Human Resource Council

CTS OHR is leading the strategic planning process for the NDUS Human Resource Council (HRC). As part of that effort, the group worked with the NDUS Information and Data Governance (IDEG) to develop systemwide dashboards to highlight key HR measures. These dashboards serve as essential tools for campuses and streamline responses to legislative requests for HR data, including:

- **Staffing Metrics** - Current and historical NDUS HR employment data by campus and systemwide totals, including faculty and staff categories for full-time, part-time and broadband classifications (see *Figure 1*.)
- **Turnover** - Current and historical turnover rates to help campuses assess employee retention success and challenges.
- **Salary Inflation Trend** - Current and historical salary data compared to inflation rates.

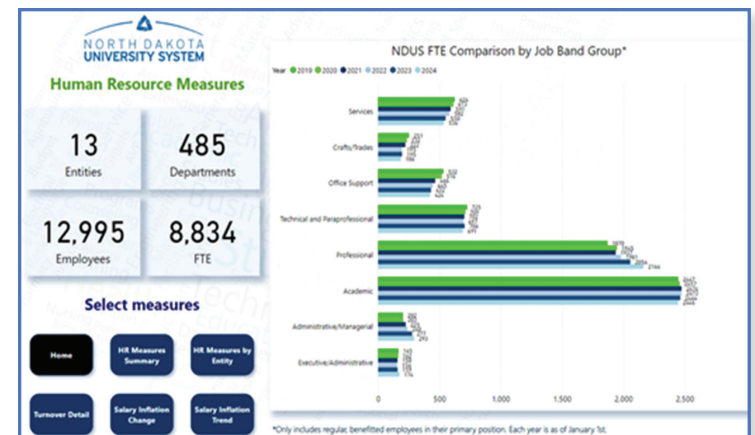


Figure 1.



# INSTITUTIONAL RESEARCH

Institutional Research (IR) oversees reporting, analytics, and inquiries for NDUS institutional data, conducts systemwide research and development for SBHE reporting, and fulfills data requests for the state legislature, governor, and chancellor. The department maintains datasets and prepares reports on enrollment, retention, degree completion, productivity, and other areas. IR also provides data and reporting services to NDUS institutions and the North Dakota Department of Public Instruction (NDDPI), collaborates on statewide data projects, and coordinates federal reporting for North Dakota’s public, private, and tribal institutions. Additionally, IR manages operations and data initiatives carried out by the Information and Data Executive Governance (IDEG).

The placement of Institutional Research within CTS is strategic and symbiotic. This positioning provides IR staff with greater access to the data systems needed for responding to systemwide data requests, enabling technology personnel to focus on daily operations and other projects.

## College Student Health Assessment Dashboard

The American College Health Association (ACHA) organizes the annual National College Health Assessment (NCHA), a research survey completed by college students from participating schools across the nation. The ACHA-NCHA collects information on students’ health practices, behaviors, and perceptions; each institution is presented with their students’ response data to further examine potential health and behavior risks at their campus. ACHA supplied Institutional Research with the data gathered from participating NDUS institutions. This data was used to create a comprehensive dashboard for the NDUS Student Affairs Council to use as a reference pertaining to social bills during legislative sessions.

## On-Demand Reporting for the State Board of Higher Ed

Institutional Research developed a series of interactive Power BI reports for the SBHE, designed to provide information often requested by board members. These reports are accessible on-demand through a protected SharePoint environment, allowing users to quickly find the necessary data to answer questions, make decisions, or prepare for upcoming meetings and presentations. This method for data consumption provides greater efficiencies for board members, including time spent submitting data requests and waiting for individual reports to be developed for each request.

## IR Staff Highlights



Dr. Ellie Shockley presented on socio-demographic disparities in STEM achievement at Bismarck State College’s National Science Foundation’s Accomplish, Innovate, Motivate Scholarship Workshop. She also collaborated with the governor’s Teacher Recruitment & Retention task force, providing research related to early departures from the profession by North Dakota teachers.

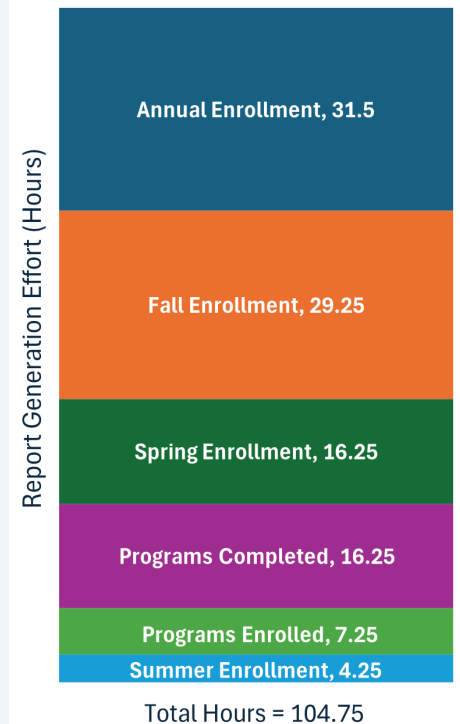
Dr. Greg Carlson completed the Project Management Professional (PMP) Certification in December 2023. Additionally, Dr. Carlson delivered a session presentation entitled North Dakota Data Resources for Student Learning and School Improvement at the North Dakota School Board Association’s Annual Convention.



## Mandated Reporting Automation

Institutional Research manually creates a series of six mandated, annual reports for the SBHE on behalf of the campuses, a process that currently takes over 100 hours to complete. To streamline this effort, IR is working to develop data models and an automated reporting process to mitigate data errors and provide greater efficiency for staff.

## Mandated Annual Reports





# INFORMATION SECURITY

## NDUS Information Security Incidents

**6,000**  
security incidents per year are analyzed by SOC personnel.

**1,300**  
of these investigations result in communicating with campuses to further investigate and remediate.

The Information Security (InfoSec) department is comprised of three teams: Security Operations, Security Engineering, and Applications Security. These teams provide security services, policy and planning, incident response, and applications access security to CTS and the NDUS institutions. InfoSec leads the NDUS Information Security Council (ISC), which is comprised of representatives from CTS and each NDUS institution. The ISC supports and advises the NDUS CIO Council on information security policies, programs, priorities, and initiatives.

### Security Operations

The Security Operations Center (SOC) collects alert data from various systems, providing enhanced visibility into the number of incidents occurring across CTS-supported environments. To effectively manage an increasing number of incidents, the SOC has implemented automated response actions and new security analysts have been hired.

### DUO Universal Prompt

Multifactor authentication (MFA) adds an extra layer of security to NDUS applications by requiring two or more user identity verification methods, such as passwords, tokens, or biometrics to log in, reducing the risk of unauthorized access to sensitive data. To further enhance security and improve user experience, NDUS implemented the Duo Universal Prompt. This prompt supports various MFA methods and has been integrated into many applications by CTS, ensuring secure and efficient user authentication while streamlining the login process for students, faculty, and staff. This implementation is part of NDUS's ongoing efforts to protect its systems and data while making the authentication process as user-friendly as possible.

Email Attack Type	Number of Attacks Across NDUS in FY24
Bulk Phishing	8,592,900
Vendor Scam	2,358,520
Advance-fee Scam	192,852
Credential Theft	157,708
Extortion	107,912
Vishing Attack	36,388
Suspected Malicious Content	33,708
VIP Impersonation	24,996
Vendor Email Compromise	10,664
Invoice Phishing	10,112
Image-Based Attack	4,180
Business Email Compromise	3,560
QR Code Attack	2,760

### Advanced Email Security

The frequency of malicious email attacks has been on the rise globally; attackers recognize this tactic as an effective method to compromise organizations. Over the past year, InfoSec transitioned to a more advanced email security platform following the discontinuation of a previous product as part of the team's continuous effort to safeguard against email-based threats. By enhancing attack prevention capabilities, the likelihood of being targeted will be reduced.

## NDUS Email Accounts Annual Activity

**24,000,000+**  
Emails inspected automatically

**11,500,000+**  
Malicious emails identified automatically

**19,000+**  
Reports received by InfoSec regarding potentially malicious emails

**6,500+**  
Potentially malicious emails manually investigated and resolved by InfoSec





# INFRASTRUCTURE & OPERATIONS

The Infrastructure and Operations (I/O) division, comprised of Identity and Access Management, Data Center Operations, Network Services, System Administration, Database Administration, and Endpoint Services, is responsible for the hardware and software foundation of the NDUS technology system. I/O collaborates with CTS staff, NDUS institutions, vendors, and NDIT to provide a robust, dependable, and relevant technology framework to ensure safe and secure data, continuous processing, and operational stability for the University System.

## Information Security Enhancements

Over the past year, the I/O team has made significant strides in enhancing information security. They implemented access control measures to ensure only authorized personnel can access sensitive data, systems, and networks. This effort has enhanced the overall security posture by preventing unauthorized access and protecting sensitive information from potential breaches. The team also focused on network and system separation, which has improved security by making it difficult for hackers to access multiple systems if one is compromised. Additionally, hybrid authentication methods were introduced, combining local IDs with Single Sign-On (SSO) and device management to ensure only trusted users and devices can access systems. These measures have strengthened security, improved monitoring, and reduced the risk of weak passwords.

## Data Protection and Compliance

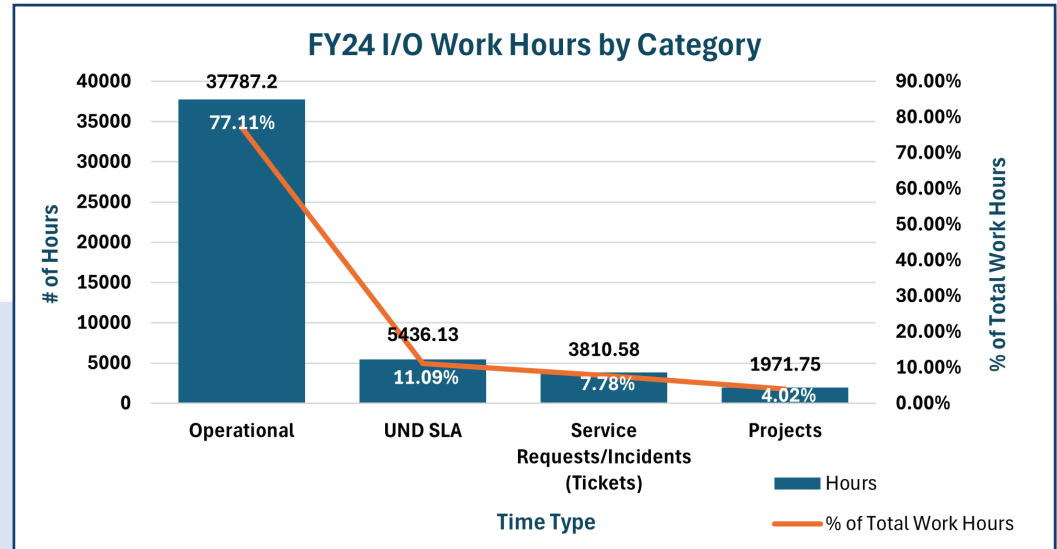
I/O continued efforts to enforce the principle of least privilege for user accounts, minimizing the risk of data misuse by granting users only the access they need. The team also implemented immutable backups to protect against ransomware attacks and ensure data integrity. These backups are crucial for disaster recovery, allowing quick restoration of information in case of data loss.

## Monitoring and Assessment

Enhanced monitoring practices were put in place to protect identities and prevent unauthorized access attempts. The team utilized vendor tools to secure databases, ensuring thorough security checks and automatic compliance with industry standards. Participation in audits further demonstrated the effectiveness of these identity management practices and helped identify areas for improvement.

## Automation and Modernization

I/O's automation of routine system administration tasks has improved security, reliability, and efficiency. Existing tools allow for centralized management of all devices, using automation for consistent application of security policies and updates. Managed cloud services were employed to modernize disaster recovery and business continuity planning efforts by offering scalability, flexibility, and enhanced security. Cloud-based solutions can be more cost-effective than maintaining onsite infrastructure and can quickly restore services, minimizing disruptions and allowing business operations to continue smoothly.



# INFRASTRUCTURE & OPERATIONS

## Enhanced Value of IT Systems and Services

To support more complex campus research projects, the NDUS Data Center was upgraded to provide better tools, increase reliability, and enhance security. I/O also added more systems to the SSO portal, streamlining user access to multiple applications through one login screen. Another completed enhancement was the redesign of the NDUS Student Information System (SIS) reporting environment. A modernized reporting system makes it simple for stakeholders to access and analyze student data, saves time and effort by streamlining the reporting process, and provides analytical tools to glean deeper insights and metrics to aid in better decision-making.

## FY25 I/O Initiatives

In the coming year, I/O personnel will concentrate on the following operational tasks to maintain excellent service and ensure robust, reliable systems for NDUS.

2024-2025 I/O Roadmap		
	I/O Initiative	Benefit/Value
Innovation and Modernization	Add a 3rd Generator at the Data Center	This addition will ensure continuous operation during power outages, supporting research activities that require reliable computing power.
	Improve IP Management Across Campuses	Better IP management will enhance network efficiency and security, reducing conflicts and unauthorized access.
	Upgrade the NDUS Private Cloud Infrastructure	Enhancements will increase capacity and performance, allowing for the support of a wider range of applications and services.
	Enhance Endpoint Management	Improved device management will ensure security compliance, reducing vulnerabilities and maintaining network health.
Security and Availability	Creating a Disaster Recovery and Business Continuity Plan	This plan will enhance IT service resilience and availability, ensuring quick recovery from disruptions.
	Upgrading DNS Systems for Redundancy	Adding backup systems will improve the reliability and performance of domain name services (DNS).
	Upgrading the NDUS Identity System	Enhancements will strengthen data protection by preventing unauthorized access.
	Implementing an Autonomous Oracle Database	This self-monitoring database delivers automated patching and upgrades, reducing human error and improving data security.
	Enhancing SIEM Capabilities	Upgraded Security Information and Event Management (SIEM) will improve threat detection and response.
	Formalizing OS Upgrade Procedures	Clear procedures will ensure operating systems are always up to date with the latest security patches, reducing vulnerabilities.
Collaboration	Transitioning Management of the UND Network	This change will improve collaboration and resource sharing within the institution, enhancing network performance, reliability, and security.
	Migrating Servers to the NDUS Data Center	Centralizing servers will streamline IT operations, simplify management, and enhance resource utilization.
	Implementing Public Cloud NDUS Infrastructure	Using public cloud resources will allow all NDUS institutions to share and access scalable and flexible resources more efficiently, improving service availability and security.



# CAMPUS CONNECTION

The Campus Connection team is responsible for supporting, maintaining, and enhancing PeopleSoft Campus Connection, the system of record for more than 46,000 active students within the NDUS. This comprehensive software suite streamlines administrative processes, enhances student services, and supports the daily business functions of the 11 NDUS institutions. Campus Connection consists of six major modules which handle various operations related to the student lifecycle, including admissions, enrollment, grading, program requirements tracking, financial aid disbursement, billing, payment processing, performance monitoring, and data-driven decision making. The team's expertise extends to integrating Campus Connection with over 40 university data systems, including housing, parking, facilities management, and scheduling, as well as student success applications, namely Blackboard Learn and Starfish. These integrations contribute to the automation of administrative tasks, provision of self-service capabilities, and enhancement of efficiency and student experiences.

## Free Application for Federal Student Aid (FAFSA) Simplification Act

The U.S. Department of Education's FAFSA Simplification Act was meant to shorten and simplify the application process as well as provide more transparency and predictability for student applicants and their families. However, the rollout of the updated FAFSA form, along with shifting go-live dates presented several challenges, requiring extensive support for the NDUS institutions by the Campus Connection team. Frequent website issues, poor communication, and process changes at the federal level led to applicant frustration, delays in financial aid distribution, and increased administrative burdens for educational institutions. Data security concerns, accessibility challenges, and language barriers further complicated matters.

## Financial Value Transparency/Gainful Employment Act Implementation

The Campus Connection team, in collaboration with Institutional Research and the NDUS institutions, will be implementing expanded regulatory reporting as required by the Department of Education (ED). Report data will be used by the ED to assess whether career programs meet the statutory requirement of preparing students for gainful employment in a recognized occupation.

## Sponsor Billing & Payments Solution

In the coming year, the Campus Connection team will implement a Nelnet application that will streamline the billing and payment process for employers providing tuition benefits for their employees. This new system will allow sponsoring employers to view bills and make payments online, creating efficiencies across campuses and convenience for third party payers.

## Staff Highlights

CTS Financial Aid Business Analyst Crystal Tangsrud was presented with the North Dakota Association of Financial Aid Administrators (NDASFAA) President's Award. The President Award is the highest individual award bestowed by NDASFAA, often reserved for members who have made a long-term contribution to the association. This award is not handed out every year and is solely at the discretion of the NDASFAA president.

Crystal also successfully passed the Certified Financial Aid Administrator (FAAC®) exam, affirming her commitment to the standards of ethical behavior that have long been a hallmark of the financial aid profession.



*Crystal Tangsrud (CTS) receives the NDASFAA President's Award; presented by NDASFAA President, Matthew Sanchez (NDSU) and President Elect, Kelsey Walters (LRSC).*



# FINANCIAL SYSTEMS

The Financial Systems team maintains the PeopleSoft Financial Management (FIN) application, which includes developing and implementing system enhancements, performing system data cleanup and archival, and applying system patches to remain current with regulation changes and government-mandated reporting. FIN is the system of record for NDUS business operations and is comprised of several modules such as General Ledger, Commitment Control, Accounts Payable, Grants, Supplier Management, and Travel and Expense.

The Financial Systems team also conducts central processing activities for the NDUS which include generating 1099s, performing fiscal year-end processes, extracting and uploading monthly PCard and bank statements, generating payroll journals, and troubleshooting financial transactions. The Financial Systems functional team actively partners with the NDUS Controllers and Financials User Group to gather requirements for new functionality, discuss common system issues, and gather feedback for potential solutions. This team also works closely with the System Office to ensure standards set forth by the Governmental Accounting Standards board (GASB) are properly followed for financial statement reporting.

## PeopleSoft Insights

The FIN team began implementing PeopleSoft Insights, dashboards that provide a comprehensive overview and analysis of financial data, allowing users to make informed decisions. Recent updates include high level and detailed financial data at various reporting levels for each campus as well as controller key metrics, and travel and expense metrics.

## PeopleSoft Fluid Expense Approvals

Enhancements have been made to the PeopleSoft Fluid Expense Approval process to create greater efficiencies. Financial users can now automatically import PCard transactions from JP Morgan into the cardholder's wallet within the system. This feature ensures that PCard usage for travel is included in the expense report without having to cross-reference the charge in the system.

## Upcoming FIN Initiatives

An Archiving project is being planned for PeopleSoft Financials. Archiving improves system performance and cost efficiency by reducing the active database size, leading to faster query responses and lower storage costs. It ensures compliance with data retention regulations, secures data integrity, and simplifies maintenance tasks. Archiving also enhances reporting by segregating historical data from current data and supports scalability as transaction volumes grow. Additionally, it plays a crucial role in disaster recovery plans, ensuring the restoration of historical data independently of live transactions. Overall, a robust archiving strategy provides significant operational, financial, and compliance benefits.

## In Memoriam

Nicci Strand, Assistant Director of Peoplesoft Financials, unexpectedly passed away June 10, 2024. Nicci had been in that position for 25 years. It was a tremendous loss for her loved ones, the Financials staff, CTS, the North Dakota University System, and the entire community. Her motto was "It is a good day to have a good day!" She showed great strength, determination, and optimism through the battles of life. She has been dearly missed.





# HUMAN CAPITAL MANAGEMENT

The Human Capital Management (HCM) team is responsible for supporting, maintaining, and enhancing PeopleSoft HCM, the single integrated human resource system used by NDUS institutions, CTS, and the System Office. This application provides for the management and delivery of HR functions and reporting for nearly every aspect of NDUS's 8,600+ employees, including benefits, time & labor, payroll, commitment accounting, absence management, performance, recruiting, and onboarding. Additionally, the HCM team administers the NDUS's semi-monthly payroll for all 11 institutions, the System Office, and Core Technology Services, applies system patching, provides Workforce Safety and Insurance (WSI) annual workers' compensation reports, processes W-2s and 1095Cs, and assists institutions with troubleshooting HR and Payroll transactions. The HCM team also provides leadership in application management by offering training to institutions and serving as active participants in the HR User Group and Human Resource Council.

## HCM and UND's Faculty Success Integration

This year, the HCM team completed a two-phase project to integrate HCM datasets with UND's Faculty Success software. The initial phase involved adding faculty bio-demographic data, while the second phase incorporated data related to faculty tenure, contracts, and academic rank. Integrating HCM data with the Faculty Success application enables more comprehensive reporting on faculty research, scholarships, and creative studies.

## Upcoming HCM Initiatives

- The HCM team will be working on improving the process for departments requesting staff security access changes. By implementing a request form and workflow within the system, the new process will provide notifications for approvers and reduce duplicate and redundant entries, promoting consistency across the NDUS.
- Additional PeopleSoft Insights will be rolled out within HCM in the coming year, focusing on payroll, benefits, time and labor, and absence management. Insights are visualizations presented in an interactive dashboard format that can provide campus administrators information at-a-glance or be used for further analysis and decision-making.

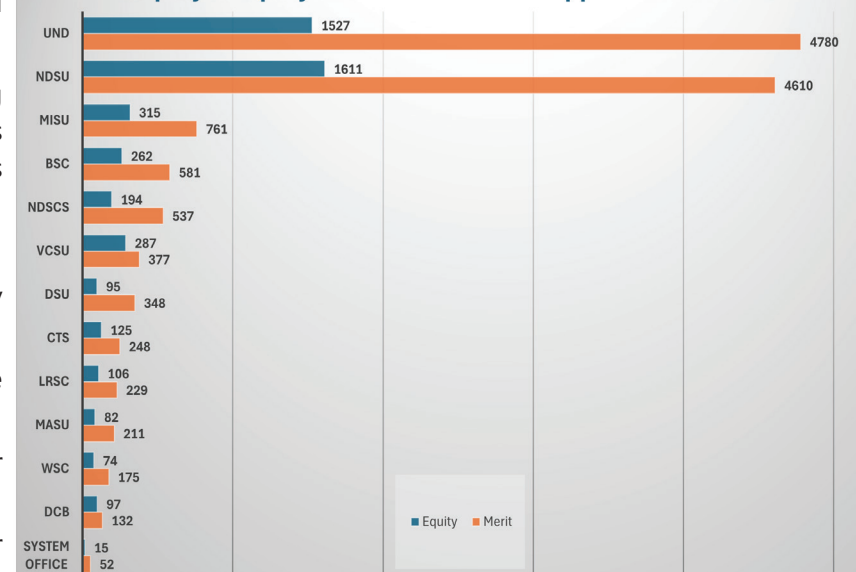
## Staff Highlights

- Karin Stinar and Kelli Heiser delivered a presentation on streamlining employee security access at Alliance, a higher education conference held in Phoenix, AZ.
- Kate Greicar continues to serve as a member of the HCM Advisory Board for HEUG, the global Higher Education User Group.
- Adam Johnson and Jonah Hendrickson were both promoted from Associate Programmer Analyst to Programmer Analyst.
- Elangovan Murugaiyan was promoted from Programmer Analyst to Senior Programmer Analyst.

## Automation Efforts

The HCM team developed two different automated processes to enhance operational efficiency and save time for campus personnel. Equity pay increases from the legislative funds awarded in FY 2024 were uploaded to the HCM system using automation, thereby eliminating the need for manual entry. Additionally, employee business and position titles are now synchronized on a weekly basis using an automated process, ensuring that each campus's directory data remains accurate and up to date.

## Employee Equity and Merit Increases Applied in HCM FY24





# ENTERPRISE SERVICES

Enterprise Services (ES) is comprised of four highly collaborative teams, Applications, Academic Services & Training, Development & Integrations, and Enterprise Technology and Analytics, that are responsible for the design, development, integration, implementation, training, support, maintenance, and administration of enterprise-level systems and web-related applications. Each team plays a crucial role in creating, delivering, and sustaining solutions that enable NDUS stakeholders to operate more effectively, improve collaboration, and achieve strategic objectives. Enterprise Services provides IT leadership and vision while planning for current and emerging technologies that expand and enhance teaching, learning, and business operations across the North Dakota University System.

## Microsoft Productivity Training

Enterprise Services offers Microsoft Productivity Suite training opportunities throughout the year for all NDUS employees. Each training session is dedicated to a specific Microsoft application, with training topics geared toward beginner through advanced levels. The increasing number of courses and growing attendance reflect a strong interest in boosting user knowledge and improving productivity.

	Fall 2023	Spring 2024
Attendance	420	584
Classes	45	57
Average Attendance	9.33	10.25

### AI Design Assistant for Blackboard Learn Ultra

The AI Assistant available in Learn Ultra is a solution designed to aid faculty and instructors with organizing their courses and content within the Blackboard application. This tool can create learning modules, grading rubrics, images, and test question suggestions based on the course title, description, and other relevant course context. Instructors can further refine and incorporate these elements into the course. Enterprise Services has enabled this optional feature for campuses wanting to leverage AI's time-saving benefits.

### Emergency Notification System Transition

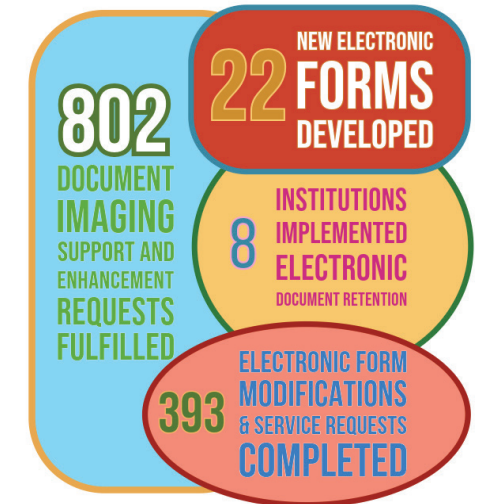
The state of North Dakota is shifting its emergency notification system to a different platform; Enterprise Services will coordinate the migration for NDUS. This transition may streamline communication resources and reduce costs by eliminating redundancies.

### Staff Highlights

- Enterprise Services staff, Kelly Restad, Patti Heisler, and Randy Wald, attended the international conference, Anthology Together 24, in Orlando Florida at the start of the fiscal year (see photo).
- Document Imaging Application Analyst, Sara Narveson, attended the 2024 Alliance Conference in Phoenix, Arizona. Sara co-presented Mastering Gideon Taylor eForms: Elevating Efficiency Through Automation with Dee Muir from CTS, along with two staff members from the University of Wisconsin Madison and University of California Berkeley.



## DOCUMENT IMAGING SERVICE REQUESTS & PROJECTS





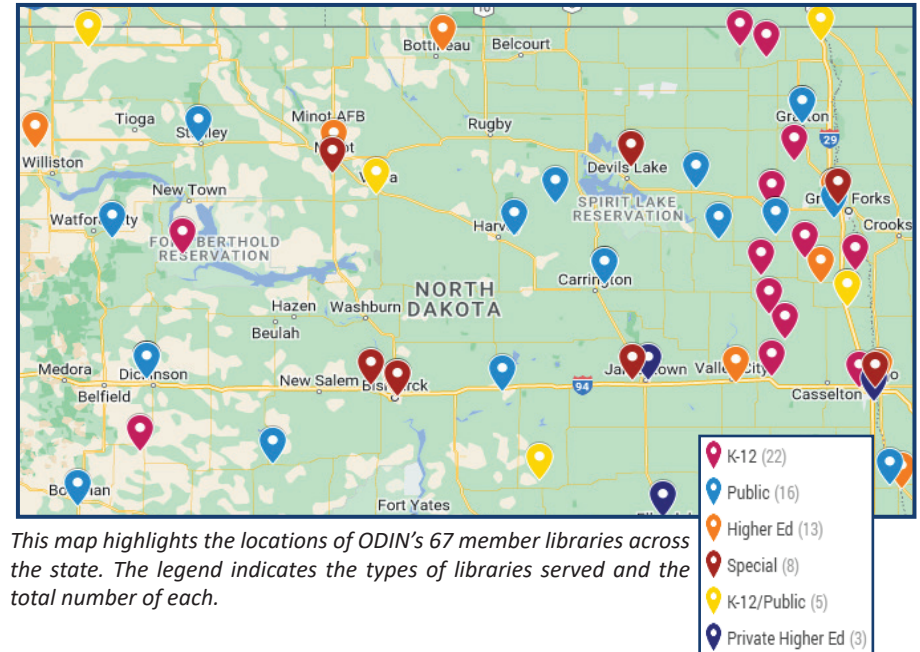
# ODIN

The ODIN Office provides library management services and system support for 67 member libraries across North Dakota, including the 11 NDUS institutions and the ND State Library. The remaining libraries served by ODIN are comprised of two private higher education institutions, K-12 schools, public libraries, and special libraries. Higher education libraries use the Alma library services platform to manage their physical and electronic material; other member libraries use the Polaris Integrated Library System (ILS). The ODIN Office also provides authentication services for E-resource access to other ND libraries. In total, over 300 ND libraries benefit from ODIN's services.

ODIN continuously evolves by partnering with member libraries to explore and evaluate products that will best meet the needs of these libraries and their users. ODIN strives to identify technologies that will enhance the missions and strategic plans of ODIN and member libraries, while keeping an eye toward efficient, secure, and cost-effective solutions.

## New Member Libraries

In the fall of 2023, McKenzie County Public Library became a member of ODIN and transitioned to the Polaris system in February 2024. In the spring of 2024, Central Valley Public School Library in Buxton, ND became a member of ODIN and is in the process of automating the library and implementing the Polaris ILS. ODIN independently managed both projects with limited assistance from vendors. The insights gained during these migrations will help mitigate implementation costs for future migrations of small to medium-sized libraries. ODIN continues to explore adding new members to its statewide consortium, focusing on underserved libraries.



This map highlights the locations of ODIN's 67 member libraries across the state. The legend indicates the types of libraries served and the total number of each.



ODIN Office staff attended the annual ELUNA (Ex Libris Users of North America) Conference held May 2024 in Minneapolis.

## Collaborative Purchase of Scholarly Journal Resource

ODIN coordinated the purchase of a statewide subscription to EBSCO's Academic Search Complete database, expanding access to academic journals from over 300 libraries. Twelve public and private North Dakota colleges and universities funded 80% of the costs while ODIN covered the remaining balance. This collaborative effort saves participating institutions over \$100,000 by avoiding individual subscriptions.

## First Annual Survey

ODIN conducted its first Annual Survey with a mix of qualitative and quantitative measures regarding systems, service and training, vendors, and future services and support. Out of 68 respondents, ODIN's service received a 100% satisfaction rate (Very and Somewhat Satisfied combined) on timeliness, friendliness, professionalism, and knowledge.

## Interlibrary Loan Bridge

ODIN and the State Library are partnering to explore options for a Statewide Interlibrary Loan system for resource sharing across ND. A unified requesting system would enhance customer service with faster delivery and better shipping cost control, while reducing overall costs on collection budgets across the state.



# IT SERVICE MANAGEMENT

The ServiceOne Program was approved in July 2021, aiming to enhance the delivery and support of CTS' products and services for the NDUS institutions. Using the ITIL® framework, this multi-year program aimed to establish an agile IT environment that is cost-effective, secure, and stable.

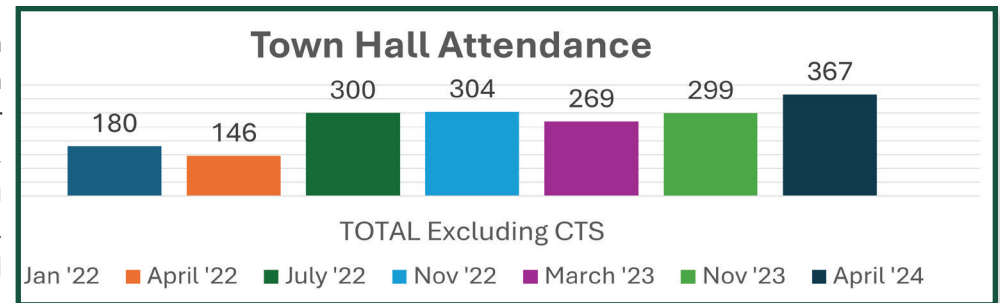
In November 2023, the program transitioned to the new ServiceOne department, emphasizing CTS's commitment to improving its IT Service Management (ITSM) capabilities. Comprised of five staff members, the department focuses on delivering exceptional client service, ensuring robust processes and controls, and driving effective Organizational Change Management. Responsibilities include managing the CTS ServiceDesk, fostering client relationships, and implementing high-standard service delivery processes. The department's overarching purpose is to streamline ITSM practices through continuous improvement efforts, ensuring efficient operations aligned with organizational goals and client expectations.

## ServiceOne Power BI Dashboard Reporting

ServiceOne goals include offering transparent and accurate service metrics to both CTS and NDUS stakeholders. Initially, monthly reports evaluated service levels based on the Service Level Agreement with the Chancellor and included additional data resulting from ServiceOne initiatives. There was a need to present this data in a more user-friendly, intuitive format using automated monthly updates. CTS collaborated with NDUS stakeholders to identify key metrics and created a customizable Power BI Dashboard. This Dashboard was presented at the December 2023 CIO Council meeting and is accessible to CTS Leadership. This is an evolving Continual Improvement effort as more ideas to enable data-driven decision making are being generated.

## Semi Annual Town Halls

Since January 2022, Core Technology Services (CTS) has organized seven Town Halls across various institutions, engaging a total of 1,865 campus participants. In FY24, these Town Halls were conducted both in-person and virtually in November 2023 and April 2024. During these sessions, CTS shared project updates, news, ServiceOne metrics, and Continual Improvement initiatives. The post-meeting surveys rated the value of these Town Halls at an average of 4.36 out of 5. Additionally, several Continual Improvement initiatives were launched or enhanced based on participant feedback.



## Implementation of new ITL Practices

ServiceOne is currently working to implement the following new ITIL® practices to further enhance the delivery and support of CTS products and services:

Practice	Purpose	Forecasted Benefits
<b>Knowledge Management</b>	To maintain and improve the use of information and knowledge across the organization.	<ul style="list-style-type: none"> <li>• Campus end users can troubleshoot and remedy issues experienced with enterprise applications, products, systems, and services, improving user satisfaction and productivity.</li> <li>• Knowledge will be formatted consistently across CTS.</li> <li>• Document repositories will be consolidated for easy access.</li> </ul>
<b>Workforce and Talent Management</b>	To ensure the organization has the right people in the correct roles, with appropriate skills and knowledge, to support its business objectives.	<ul style="list-style-type: none"> <li>• Enables organizations, leaders, and managers to focus on creating, executing, and evaluating an effective and actionable people strategy including (but not limited to) succession planning, professional development, career ladders, and onboarding practices.</li> </ul>



# IT SERVICE MANAGEMENT

## Service Level Agreement Changes

The Service Level Management Program was implemented in 2023. As part of the implementation, CTS negotiated a blanket Service Level Agreement (SLA) with all NDUS campuses and the System Office, setting service level attainment goals for Incidents and Service Requests. The SLA included specific response and resolution targets for defined priority levels; the higher the priority, the faster an Incident or Service Request was expected to be acknowledged and resolved by CTS. Performance was measured and reported monthly to institutions and CTS staff.

Analysis performed on the first 20 months of data indicated that overall, CTS had exceeded the initial SLA benchmarks. In alignment with ServiceOne's continual improvement efforts, the SLA was updated with enhanced response and resolution goals for CTS's Incidents and Service Requests for the 2025 fiscal year (see *Figure 2*.)

SLA Attainment Goals for Response and Resolution Targets		
INCIDENTS		
Response Time Service Level Goal	Previous SLA	New SLA
Resolution Time Service Level Goal	90%	95%
	87%	90%
SERVICE REQUESTS		
	Previous SLA	New SLA
Response Time Service Level Goal	90%	95%
Resolution Time Service Level Goal	90%	95%

Response and Resolution Time Targets by Priority Levels		
Priority (P)	Response Time	Resolution Time
1 (Incidents only)	15 Minutes	4 Hours
2	1 Business Hour	1 Business Day
3	1 Business Day	3 Business Days
4	2 Business Days	5 Business Days

*Figure 2: Previous and new SLA target percentages for meeting defined response and resolution times for Incidents and Service Requests submitted to CTS.*

## Staff Highlights

Staff Ericka Westphal (IT Service Management) and Cordell Wagendorf (Enterprise Services) presented at TDX Converge, a three-day virtual summit for users of TeamDynamix, CTS's work management and ticketing system. Their presentation entitled Power BI: Your Partner in Service Management demonstrated how CTS developed operational, leadership, and departmental dashboards to replace manual monthly reporting processes related to Incidents and Service Requests. These dashboards have transformed CTS's ability to effectively manage tickets, improve users' experiences, and identify continual improvement initiatives.



## Continual Improvement Initiatives

ServiceOne emphasizes Continual Improvement as part of its sustainment plan. Feedback is crucial, resulting in actions being taken regularly, including identifying and implementing new initiatives. Recent analysis highlighted the need to strengthen the Problem Management practice and enhance the Customer's Service Request experience.

## Problem Management

Problem Management was the first practice introduced by CTS as part of the ServiceOne Program. However, a Continual Improvement process audit revealed that the return on investment and commitment to the process needed more focus. To address this, CTS worked to refine the practice by tailoring it to align with CTS-specific processes, ensuring it meets the organization's needs more effectively.

## Service Request and Service Catalog Redesign Project (SeRFCat)

CTS's customer satisfaction survey results indicated a low customer score for ease of submission regarding Service Request tickets. With an objective to improve customer satisfaction, CTS utilized focus groups to provide insight on challenges experienced with the current process. Users indicated the number of Service Request options were overwhelming, making it difficult to determine which request form to fill out. Through feedback analysis, CTS determined it could improve its customer service and simplify the ticket submission process by reducing the number of service categories and related request forms. This project also offered an opportunity to standardize the look and feel of the ticketing forms, enhancing the overall user experience.



# FY24 ORGANIZATIONAL PROJECTS

The staff of Core Technology Services work collectively to identify, plan, and execute numerous IT projects each year, demonstrating the power of teamwork and the diverse range of IT skills within the organization. The 2024 fiscal year featured a variety of initiatives, each serving as a reflection of CTS's strong commitment to innovation and excellence. The following pages detail recent achievements and outline upcoming IT initiatives designed to propel both the organization and the university system forward over the next year and beyond.

## ■ Completed Projects ■

### Appsian Analytics

Launched in early 2023, the deprovisioning project aims to standardize NDUS procedures for removing access to enterprise applications, systems, and data when users leave an NDUS institution. Following best practices established by the National Institute of Standards and Technology and the NDUS Information Security Council, this new approach will employ automation to mitigate human error and boost efficiency, while also improving security by preventing unauthorized access. Deprovisioning timelines for removing inactive faculty, staff, and student credentials have been determined and implementation work is underway. The project is expected to be completed by the end of 2024.

#### CTS Collaborative Teams:



### Modifications to Supplier Payment Process

At the request of the Chancellor, CTS collaborated with NDUS campuses to enhance the supplier payment process by implementing new security protocols aimed at reducing the risk of financial fraud targeting the NDUS. Financial Services and the campuses analyzed the current process to identify necessary procedural modifications; the Financial Systems team redesigned the existing process within the Financial (FIN) system to accommodate these important changes. Supplier bank details are verified prior to disbursing any payment that exceeds a specified monetary limit.

#### CTS Collaborative Teams:



## PeopleTools 8.6 Upgrade

This year, CTS implemented and updated PeopleTools in all Campus Connection environments. PeopleTools is a software technology that provides the underlying infrastructure for PeopleSoft applications and is used to develop, deploy, and maintain those applications. It also ensures the latest security patches, performance optimizations, and new features are available, improving user experience and system efficiency. Regular upgrades guarantee vendor support and compatibility with the latest technologies, reducing maintenance costs and technical debt. These updates also resolve known issues, enhance regulatory compliance, and prepare the system for future needs, leading to higher user satisfaction and better adoption rates among students, faculty, and administrative staff.

### CTS Collaborative Teams:



## Emerging Technologies Procedure

Under the lead of Institutional Research, the Information & Data Executive Governance (IDEG) and CTS staff collaborated to draft a CTS policy on the use of Artificial Intelligence (AI) and Machine Learning (ML), which was adopted by the organization in fall 2023. After an initial review by the NDUS CIO Council, the policy was shared with the board. SBHE committees have reviewed this policy and are referencing it for the development of a systemwide emerging technologies policy and procedure.

### CTS Collaborative Teams:



## Next Generation Data Center - Microsegmentation

The NDUS Data Center was designed with security in mind. As technology matures at a rapid pace, methods to reduce server attacks must be adapted to protect system data. CTS implemented microsegmentation in the Data Center, an approach that divides networks and servers into segments, allowing for the application of individual security policies for each segment to control access at a more granular level. This process monitors and controls communication between servers in the Data Center, resulting in reduced attack surface by preventing lateral movement. It also identifies workload behavior anomalies, helps remediate threats, and continuously monitors compliance.

### CTS Collaborative Teams:



## Scholarship Management

CTS worked with the North Dakota University System Financial Aid Office to implement a new software as a service (SaaS) solution to consolidate all activities related to the administration of ND state-funded grant, scholarship, and loan repayment programs. This recently launched system is expected to streamline processes, quickly adapt to changes in state programs, and enhance service quality for applicants, ultimately benefiting North Dakota students by making these programs more efficient and accessible.

### CTS Collaborative Teams:



Campus Connection team at CTS's annual employee gathering. This year's theme celebrated various decades, including the food and clothing!

## Privileged Access Management

Compromise or misuse of a privileged account poses significant risk to the organization. Privileged Access Management (PAM) allows CTS to manage and secure administrative access and privileged accounts on the organization's computers, systems, and infrastructure, providing visibility to risky privileged account behavior. Adhering to least privilege (bare minimum) principles can reduce the likelihood and impact of a credential attack.

### CTS Collaborative Teams:



## Novelution

Novelution is a web-based management platform that has streamlined the administration and compliance of research grants for the NDUS's two major research universities, University of North Dakota (UND) and North Dakota State University (NDSU). Project work included the digitization of paper-based processes for proposal submission, routing, approvals/revisions, and protocol compliance, resulting in significant time-saving efficiencies for faculty, departments, researchers, and staff. Six separate modules are active across both campuses; four at UND and six at NDSU. This strategic initiative aligns with the enhanced research vision of the North Dakota University System (NDUS), demonstrating dedication to supporting research excellence and innovation across the institutions.

### CTS Collaborative Teams:



## Data Classification & Information Protection

CTS implemented Microsoft's Data Classification and Information Protection technologies within Microsoft 365 for CTS and System Office employees. This solution provides access controls and encryption, thereby increasing the security of private and restricted data in Microsoft 365 applications and on endpoint computers. Sensitivity labeling significantly reduces the risk of data breaches and exposure of confidential and classified data to attackers and other unauthorized individuals.

### CTS Collaborative Teams:



## GLBA Safeguards Rule Assessment

Last year, NDUS contracted with security consulting firm, Campus Guard, to assess its compliance with the federal Gramm Leach-Bliley Act (GLBA) Safeguards Rule which regulates the handling of Nonpublic Personal Information (NPI) by financial institutions. In 2023, the Federal Trade Commission and Department of Education extended this law to higher education institutions that manage student financial aid records containing NPI. Following the assessment, NDUS established the GLBA Cross-Functional Committee, comprised of staff from CTS and the 11 institutions, to implement remediation efforts, including securing student financial aid data and ensuring regulatory compliance.

### CTS Collaborative Teams:



## ■ In Progress Projects ■

### Deprovisioning

Launched in early 2023, the deprovisioning project aims to standardize NDUS procedures for removing access to enterprise applications, systems, and data when users leave an NDUS institution. Following best practices established by the National Institute of Standards and Technology and the NDUS Information Security Council, this new approach will employ automation to mitigate human error and boost efficiency, while also improving security by preventing unauthorized access. Deprovisioning timelines for removing inactive faculty, staff, and student credentials have been determined and implementation work is underway. The project is expected to be completed by the end of 2024.

#### CTS Collaborative Teams:



### Data Governance

CTS is implementing a comprehensive data governance platform for NDUS's Data Lake to address data challenges, including data discovery and classification, data lineage and impact analysis, data cataloging and collaboration, and data security and privacy. This application will also help NDUS to further leverage its data assets for data-driven insights and innovation. The solution will deliver a unified data map, a centralized data catalog, and a suite of data protection and management solutions integrated with NDUS's existing data services and tools. Following best practices, the project will ensure data quality, reliability, and compliance while providing excellent value and ROI based on NDUS's data needs and goals.

#### CTS Collaborative Teams:



### Enterprise Resource Planning (ERP)

Since 2002, the NDUS has utilized Peoplesoft's Campus Connection, Financials, and Human Capital Management software, along with over 40 integrated ancillary applications, for its Enterprise Resource Planning (ERP) solution. Collectively, these systems provide the necessary tools for the 11 institutions, System Office, and CTS to manage their respective business processes across different departments and functions.

### Market Study

The recent ERP market study aimed to understand current trends and developments in the ERP market for higher education. Objectives included assessing the current state of NDUS's ERP applications, identifying top ERP solutions in today's market that will fulfill NDUS's business needs, evaluating the benefits and drawbacks of new ERP systems, and determining the costs and risks associated with implementation.

Key findings from the study were presented to the SBHE in 2024, including a recommendation by the ERP governance group for NDUS to move forward with preparing for a multi-year transition to a single vendor, cloud-based ERP system by 2035. For FY25, these steps include:

- Planning for cloud readiness with consulting, technology-driven backfill strategy, and securing stabilization funding.
- Conducting analysis for cloud platform vendors, backfill staffing, and implementation partners.

#### CTS Collaborative Teams:



## UND Network

Core Technology Services and the University of North Dakota (UND) are working to separate the CTS and UND network infrastructure both physically and administratively. The objective is to enable UND to manage its own network independently, with support from CTS Network Services comparable to that received by other NDUS institutions.

### CTS Collaborative Teams:



## Procurement Automation

The Procurement Automation project aims to enhance NDUS's digital effectiveness by aligning with the North Dakota Office of Management and Budget's strategic goal to improve technological capabilities and the NDUS IT goal to facilitate digital transformation of systems and services. The project will update capabilities for sourcing management, improving citizen experience with an easier, secure solution and vendor enablement, and allow vendors to compete for contracts and drive cost-effective pricing. New business functionalities in contract management and data analytics will increase efficiencies, standardize procurement processes, and ensure consistent enforcement of policies and rules to improve the vendor experience.

### CTS Collaborative Teams:



## ■ Roadmap: RFPs & RFIs ■

Several NDUS enterprise systems and services will be approaching their contract expiration over the next biennium. In accordance with procurement policies and procedures, CTS will be issuing Requests for Information (RFI) and Requests for Proposal (RFP) for the following systems:

Housing	Parking
Academic and Event Scheduling	24/7 Tier One Helpdesk
Work Management/IT Service Management	Learning Management System

## ■ Ongoing CTS Initiatives ■

### Work-Based Learning

CTS remains committed to supporting the IT workspace within the North Dakota community. Continuous staff development is crucial to maintain comprehensive training in professionalism, security, service, and culture. Since 2020, CTS has partnered with NDUS institutions to offer internships and apprenticeships aimed at nurturing IT talent. These interns and apprentices help CTS by occupying challenging-to-fill positions, thereby enhancing job satisfaction for departmental staff who mentor these emerging IT professionals.

Positions	FY24 Hired	Total Hired Since 2020	Placement Rate	Retention Rate
Apprenticeships	2	5	100%	100%
Interns	1	11	64%	64%

### Information and Data Executive Governance (IDEG)

The IDEG structure reaches across all NDUS institutions, System Office, and Core Technology Services. It operates under the guidance and oversight of the NDUS Chief Information Officer (CIO). The mission for the Information and Data Executive Governance (IDEG) Steering Committee is to:

- take the lead role in the creation, implementation and oversight of NDUS enterprise level information and data management goals, standards, practices, and processes, and ensure alignment with the goals of the North Dakota University System;
- provide expert advice and support in relation to all aspects of information and data governance including data ownership, protection, privacy, and quality, information usage, classification, and retention; and
- promote data governance throughout the North Dakota University System.

IDEG completed a number of different projects this year, from developing semantic models and dashboards for CTS, the System Office, and the institutions; expanding the NDUS data lakehouse with validated and standardized enterprise system data; to creating additional AI assistants. Additionally, standardized, repeatable processes and templates were created and implemented for handling and documenting IDEG development requests, inventory, and retention. Communication and training have also been a focus; IDEG has introduced weekly, bi-weekly, and monthly opportunities for anyone interested in learning more about data and artificial intelligence topics.

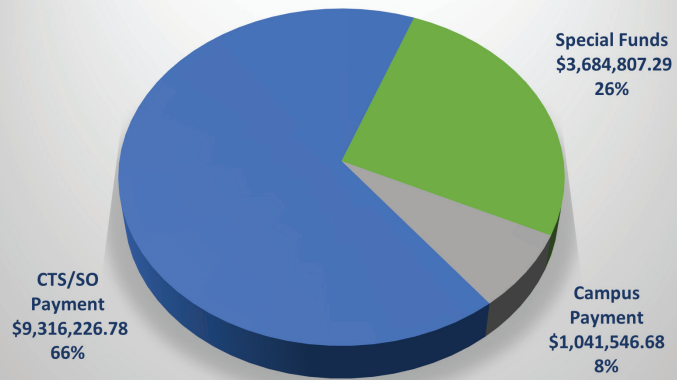
Over the past four years, CTS and IDEG have engaged CATCH Intelligence to complete three separate assessments for data maturity, Business Intelligence Competency Center discovery work, and a data lakehouse proof of concept. All together, the assessments identified 17 gaps resulting in 56 recommendations. 38 recommendations have been implemented, five are in progress, and 13 have not been started, although solutions have been identified.

### FY25 Initiative

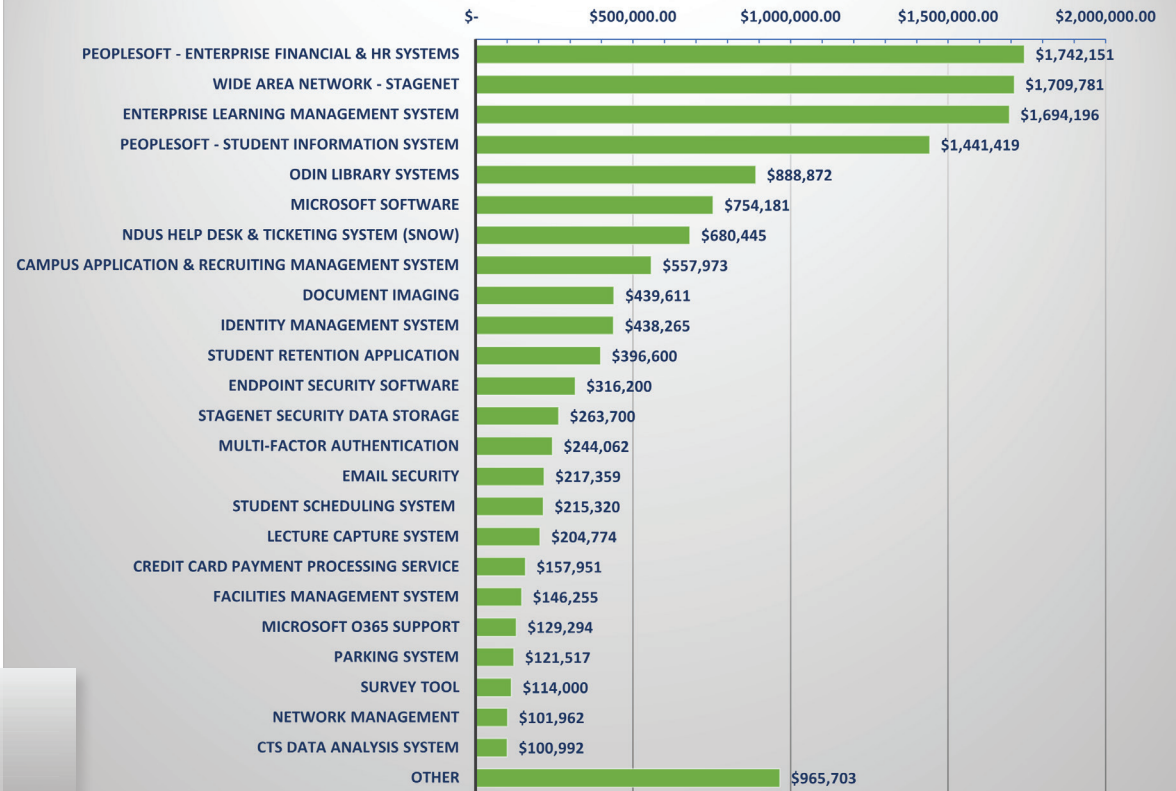
**AI Governance** -IDEG and CTS's Office of the CIO are creating an AI governance structure to ensure responsible and ethical AI deployment within Core Technology Services. This initiative acknowledges AI's transformative potential and will address associated challenges and risks. The NDUS Office of Internal Audit will provide risk management expertise.

# NDUS System Service Cost Evaluation

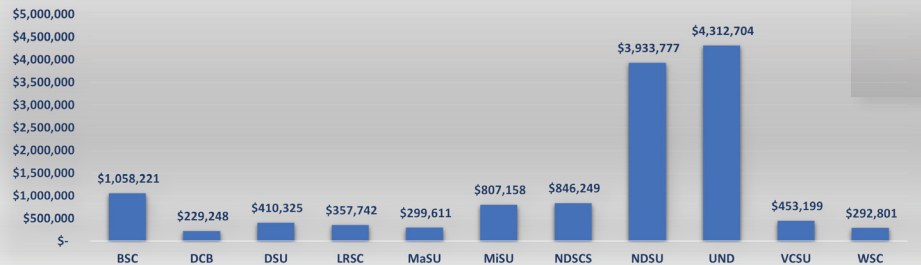
### NDUS Support for System Services



### Cost by System Service (Over \$100,000)



### NDUS System Services Spend by Campus (Student FTE)



NDUS System Services Spend  
Per Student Per Year:

**\$378.30**



# Core Technology Services – Goals

Four goals provide Core Technology Services (CTS) with the guiding principles for information technology (IT) planning and system implementations. These IT goals are shared among the eleven NDUS institutions and align with all six strategic goals of the North Dakota State Board of Higher Education.

## Goal 1

### **Support the North Dakota University System’s infrastructure needs.**

This goal provides the foundation for Information Technology (IT) in support of NDUS business processes. Infrastructure integrates and links information technology systems and allows those systems to communicate with each other over a network. Infrastructure includes such things as security and access control for which guidelines must be developed and updated as needed. Enterprise Architecture provides a blueprint for establishing information technology policies, procedures, and guidelines to promote effective use of information technology.

## Goal 2

### **Facilitate digital transformation of systems and services.**

In the realm of higher education, digital transformation encompasses a series of coordinated shifts in organizational culture, workforce, and technology. These changes aim to establish new strategic directions, focusing on improving the learning journey for both students and faculty, updating and streamlining educational and operational models and systems, and using data effectively and ethically for decision-making. Incorporating artificial intelligence (AI) technologies, such as intelligent automation and predictive analytics, can facilitate cost reduction and enhance operational agility, leading to improvements in productivity, customer service, governance, and compliance. To stay competitive, the NDUS is committed to fostering AI-powered digital transformation across its systems and services, recognizing the potential of AI in shaping the future of education and research.

## Goal 3

### **Provide a user experience that is responsive to changing needs and expectations.**

In the rapidly evolving world, the needs and expectations of our users - students, faculty, staff, North Dakota residents, and affiliates worldwide - are changing. The NDUS systems and services must be responsive to meet their needs and address their expectations.

## Goal 4

### **Improve and enhance the North Dakota University System collaborative efforts**

By working together and with the State, K-12, and other constituents, the NDUS is able to implement, integrate, and support systems and services that further the missions of NDUS institutions.