

Office of Data Analysis and Strategy
Division of Academic Affairs

Year in Review
2020



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Welcome!

No doubt 2020 was a year of unprecedented events and one that has marked the memory and life of many generations. However, it brought us the opportunity to get closer to our family, while learning how to work, live, and play in the same place – our homes. For ODAS, it was no exception; abruptly, we went from full time at an office to full time at home, literally in one day. Our priorities needed to be redefined to support others within our department and to get used to a temporary new normal that became more permanent as days went by. The situation was more complex when the team had only worked in the same office for about 6 months, and we were just starting to know each other. Yet, we adapted and took advantage of the challenges of growing as a team and continuing our progress.

In 2020, ODAS continued its growth by strengthening our partnerships, becoming more aware of the needs of our medical school and department. We were able to support many of our partners and develop solutions with our Brody community in mind. As a team, we experienced the joy of presenting our work locally and nationally and how proud we felt sharing our knowledge with our counterparts and professionals in other institutions. Our efforts demonstrated that teamwork, adaptability, and commitment are needed to bring innovation.

What does 2021 bring for us? Well...more exciting projects and challenges. Most importantly, opportunities to grow as a team and knowing that the support of our partners and leaders continue to be pillars of the work ODAS does to support Brody School of Medicine.

Sincerely,



Jhojana Infante Linares
Director

Mission

To provide insightful knowledge and information to support decision making, quality improvement, data management, and educational strategies at Brody School of Medicine.

Vision

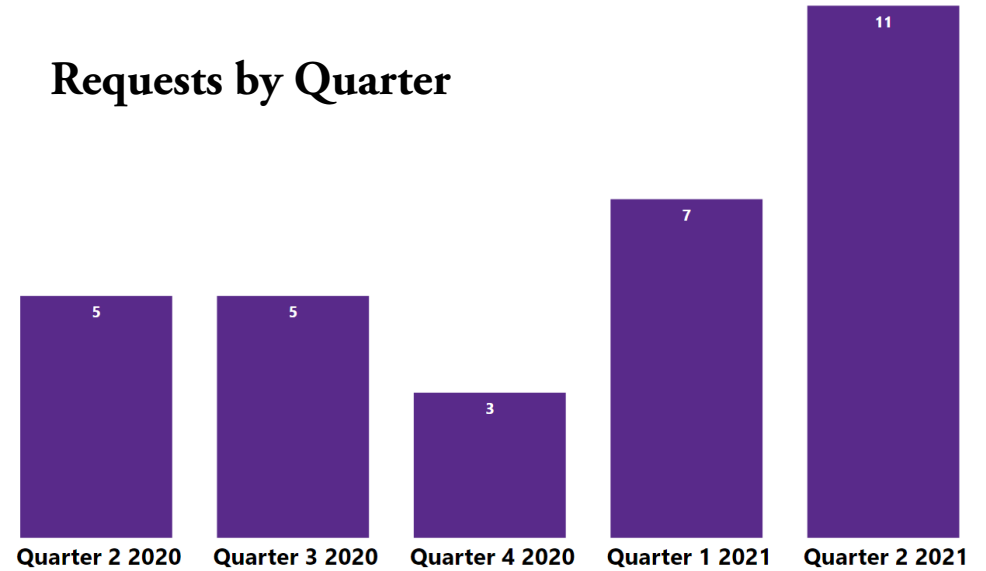
Proactively deliver innovative and data-centric solutions to support the School's mission and impact medical education communities in eastern North Carolina and beyond.

Core Values

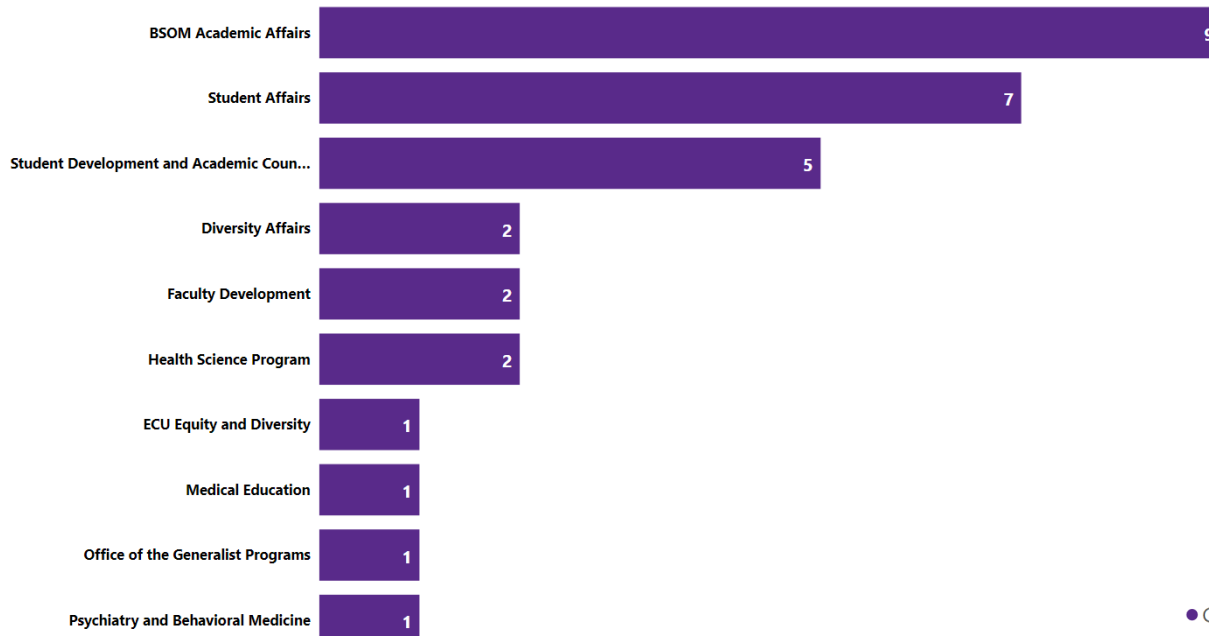
1. **Teamwork** - Demonstrate commitment to working with others and create a collaborative environment
2. **Reliability** - Produce consistent, accurate and useful solutions
3. **Objectivity** - Maintain a neutral position and do not allow biases to interfere with our daily operation and decisions
4. **Professionalism** - Maintain integrity, good judgement and competency in all matters
5. **Adaptability** - Embrace change as a path to grow and improve

Over 30 requests in 2020

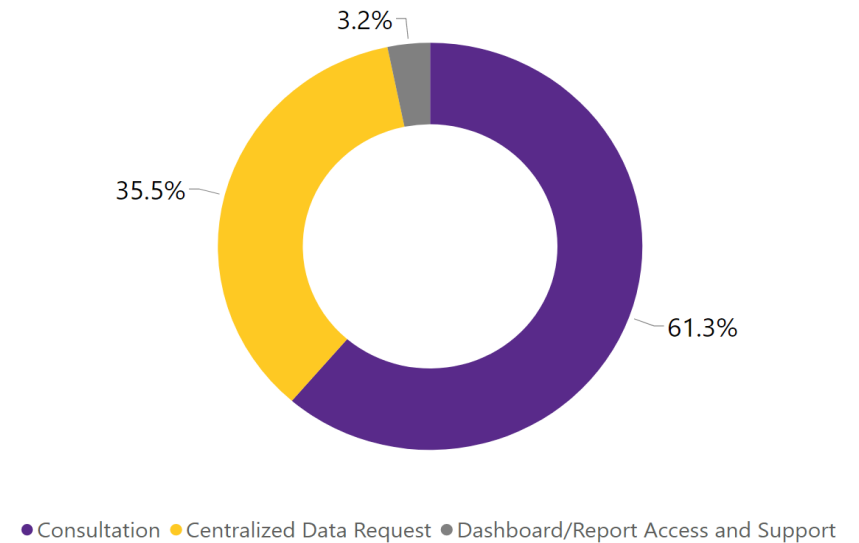
Requests by Quarter



Requests by Office/Department



Requests by Type

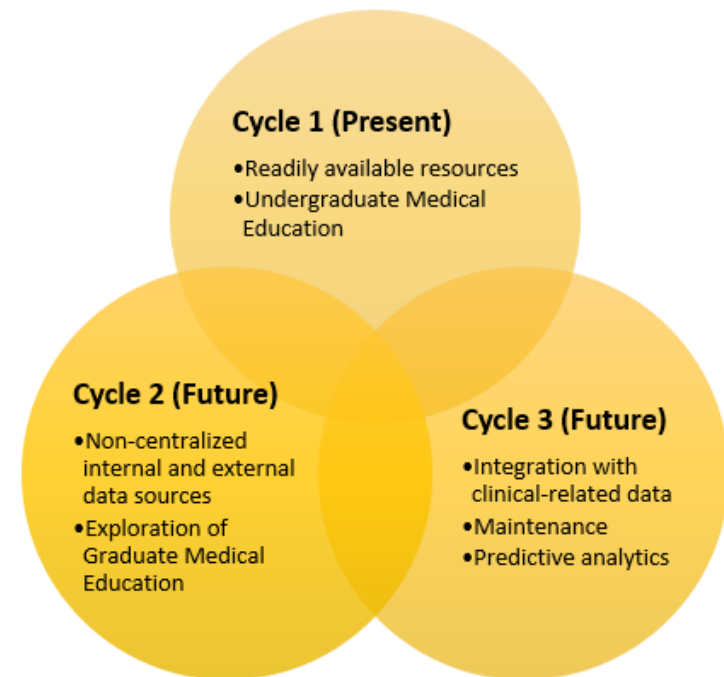


The educational data warehouse is a repository of data from various educational applications used at Brody School of Medicine (BSOM). It provides a centralized platform to integrate data from multiple applications, like the learning management system, student information system, computer-based testing, and others, allowing users to see learner's progression in their medical education from admission to graduation and beyond. This one-place of data storage eases data availability for scholarship purposes, medical education research, reporting, continuous process improvement, and monitoring programs' quality. The warehouse is being developed in approximately three cycles. Each cycle is comprised of a series of projects, and each project has multiple phases.

Medical Faculty and Student Information System (Project MFASIS): First datasets housed within the educational data warehouse. Initial infrastructure was developed to stored NBME and USMLE test scores, Residency Match Results, Residency Program Directors Survey, and results of BSOM exams taken in foundational years. A framework developed to store, manage, report, and analyze data from AAMC surveys (Graduate Questionnaire, Year 2 Questionnaire, and Matriculating Student Questionnaire).

eValue historical data extracts: Created tables and views to store curriculum and student performance data collected via eValue.

Clinical student performance (in-progress): Discover data sources and develop data tables to store student performance during the clinical phase of the medical education curriculum in the educational data warehouse.



ODAS develops and maintains a wide range of reports and visualizations. We provide solutions that enable our BSOM community to access data from multiple systems and create visualizations to share information across departments and the general public. ODAS also includes support for statistical analysis and predictive analytics in medical education. ODAS desires report users to gain valuable insights into the educational data by revealing and communicating patterns, trends, and correlations.

Foundational phase assessment outcomes (aggregated view): Report accessible to course directors to analyze student's exam performance aligned with USMLE content outline.

Faculty diversity snapshot reports: Develop a process for reporting annual metrics related to faculty diversity in collaboration with the Office of Diversity Affairs and BSOM Office of Human Resources.

GQ and Y2Q mistreatment comparison: Presents historical and most current mistreatment data collected from two annual national surveys administered by AAMC; Year 2 Questionnaire (Y2Q) and Graduate Questionnaire (GQ).

Student mistreatment reporting: Development of annual report for Senior Associate Dean of Academic Affairs to share with stakeholders concerning trends in student mistreatment data for the 2019-2020 academic year.

Preferred names, pronunciation, pronouns: PowerBI report presenting preferred names, name pronunciation, and pronouns used by students, faculty/staff, and other members of BSOM community. The report is available to all BSOM students, faculty, and staff.

Psychiatry NBME and OSCE scores by site: Reports used by the Psychiatry Medicine clerkship to analyze student performance in NBME and OSCEs (objective structure clinical examinations) by rotation and sites.

Tagging report: Report develop to monitor exam questions tagging by course directors or faculty with USMLE content outline. Provides the number of exam items tagged by category, curriculum block, and exam name.

USMLE student view 1.0: Report accessible to medical students presenting their performance on exams aligned with the USMLE content outline. Intended to assist with student’s evaluation of their performance while focusing on improving preparations for Step 1.

Year Two Questionnaire (Y2Q) dashboard: Visualization presenting annual results from student survey conducted by AAMC. The report presents highlights on mission-related questions, year-to-year trends, and benchmarking to national survey results.



ODAS participates, coordinates, and aids in measuring improvements in the quality of the medical education program. ODAS staff has been highly involved in developing a faculty-centric, committee-led continuous quality improvement process (CQI) to monitor accreditation standards established by LCME. Consultation services are available for partners to engage in process and quality improvement of day-to-day operations and programming. In a business process improvement consultation, our office analyzes critical components like the current state of the process, dataflows and software systems, identification of bottlenecks or constraints, possible improvement solutions, and implementation timeline.

Additionally, ODAS engages in educational outreach for partners and stakeholders. Staff provides opportunities and participates in events like Lunch-and-Learn sessions and additional educational programs related to data management, process improvement, and other related topics throughout the year.

BSOM medical students alternative ID programmatic update: Programmatically update and maintain various IDs to identify students in the national examinations, admissions, and residency applications. This project allowed us to standardize and have minimal maintenance in cross-referencing student-level data identification from various sources.

Committee on Curriculum and Educational Quality (CCEQ): ODAS participates at the CCEC and presents relevant educational data for the committee to monitor the regular review of accreditation standards.

OSDAC business process reviews: Analysis of functions, business processes, and data collected by the Office of Student Development and Academic Counseling (OSDAC). Consultations on tools and strategies to better organize and manage student data.

Student absence request process: Update and streamline the procedure for students to request absences, facilitate the approvals/denials, and communication with course/clerkship directors.

ODAS participates, collaborate, partners with, and provides support with other offices across BSOM on initiatives.

BSOM connection initiative: Student support initiative started during the COVID-19 pandemic. Development of REDCap form for staff and faculty volunteers to log student calls and alert specific staff in Academic Affairs of students of concern.

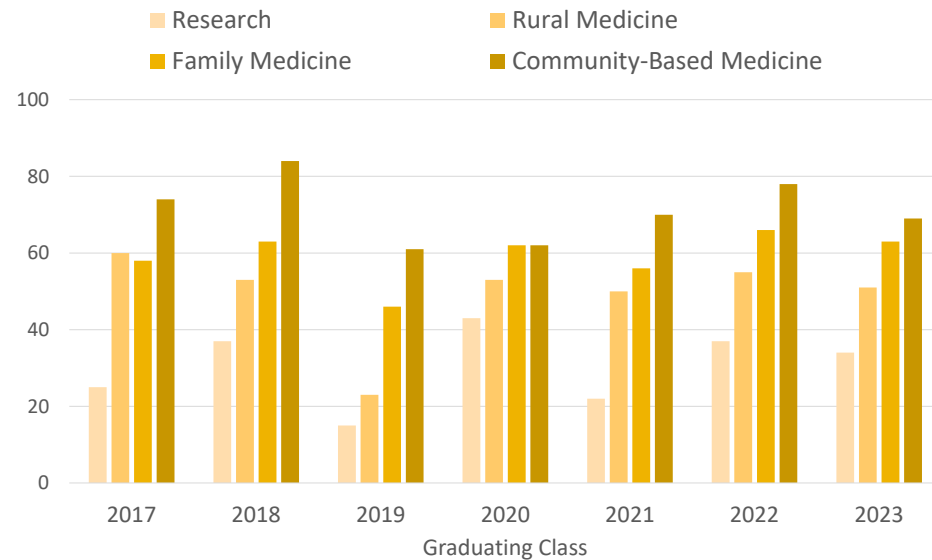
Faculty diversity snapshot reports: Identify internal and external data sources to use as measures and benchmarks. This project led to 19 departmental reports and a dean’s leadership team report to be produced annually.

Medical students Myers-Briggs Type Indicator

(MBTI) Analysis: Initial analysis of MBTI results administrated by OSDAC to medical students. Initial statistical analyses have been completed on the frequency of type preferences, personality types, and pair preferences within each cohort, aggregated for the three years, and national benchmarking data.

Meeting the needs for primary care: Data explorations and analysis using various sources like AAMC student surveys, the Mission Management Tool, and data collected internally like match results and employment outcomes. The purpose was to provide evidence of Brody fulfilling its mission and identify how the school meets the needs of primary care in North Carolina.

Factors in Selecting Med School - Experiences or Opportunities (MSQ)



ODAS plans to continue with the exploration, development, and integration of widely used systems in the educational data warehouse in the upcoming year. With centralized data, we aim to create reports and visualizations to evaluate performance in the medical education curriculum, monitor the quality of the education program, and support efforts of scholarship and accreditation.

New and continuing projects for the upcoming year include:

BSOM admissions data and reporting: Storage of applicants data not stored in the student information system in the educational data warehouse. Automation of admission documents and reports.

CBSE Comparison Report: Track student performance in 1st, 2nd, and 3rd attempt of NBME Comprehensive Basic Science Examination. Report to assist with analysis student performance across attempts and cohort.

Clinical student performance: Discover data sources and develop data tables to store student performance during the clinical phase of the medical education curriculum in the educational data warehouse.

Cohort Observation Log Report: Report to optimize workflow and distribution of observation and procedures logs to clerkship directors and coordinators.

CQI data visualizations and reports: Development of dashboard and report(s) to review various data on student performance in both the pre-clinical and clinical years of medical education, survey responses, and operations.

Distinction track quarterly review form: Combine the different Distinction Track (DT) quarterly review form into a single REDCap form to optimize workflow and data collection and analysis.

Matriculating Student Questionnaire (MSQ) dashboard: Develop visualization to present annual and trends of results from the AAMC MSQ.

MBTI and academic performance in the fundamental phase of medical school: Examine the psychological preference profiles of matriculating students at Brody and to determine if there are correlates between student preferences and academic performance during the foundational phase of medical school.

Residency application outcomes form: Develop a database to collect and store Electronic Residency Application System (ERAS) data. Build an interface for students to provide information on programs they received interviews from those applied through ERAS.

Residency application data reporting: Develop Develop visualizations and reports collected on residency applications and interviews. Provide short-term and long-term reporting structures to support career advising.

MedEd Day 2020

Title: An innovative way to present Residency Match outcomes and improve its business process at Brody School of Medicine (Presentation)

Authors: Infante Linares, Jhojana L., Smith, Jedediah S., Rehfeld, Otto, Stroup, Scotty, Wooden, Kendall, Molina, Hector.

Summary: The Office of Data Analysis and Strategy, with assistance from Information Technology & Communications Services, improved the Brody School of Medicine at East Carolina University® presentation tool of match results. The project also helped enhance and standardize the collection and reporting of match data in an interactive visualization.

Title: Making quality improvement of medical education continuous through ongoing monitoring of accreditation standards (Poster)

Authors: Alexander, Chelley K., Lee, Hugh M., Vanderpool, Gary, Smith, Jedediah S., Infante Linares, Jhojana L*, Campbell, Kendall M.

Summary: Establish a faculty-centric, committee-led CQI process to improve the quality of the medical education program. Additionally, the CQI process monitors accreditation elements and establishes an ongoing schedule for reviewing accreditation elements. A well-designed CQI approach can improve school operations and ensure adherence to accreditation elements while mitigating fatigue by streamlining the school's efforts.

Presenter(s) underlined

*Collaborator

2021 ECU Love Data Week

Title: From a data file to reporting: an approach to managing survey data (Presentation)

Authors: Rehfeld, Otto, Smith, Jedediah S., Infante Linares, Jhojana L., Stroup, Scotty, Yeduri, Huma, Molina, Hector

Summary: Surveys are conducted for many reasons, and these are one of the primary methods for data collection. However, managing survey data can be exhausting. This session will present (1) a way to manage data collected from surveys, (2) the processes developed to import and transform survey data in centralized operational storage, and (3) showcase a case study for survey data reporting.

Title: Introduction to PowerBI (Presentation)

Authors: Infante Linares, Jhojana L., Stroup, Scotty

Summary: PowerBI is a Microsoft business intelligence solution with user-friendly tools for reporting and analytics. East Carolina University and Brody School of Medicine utilize connecting and reporting data in a broad range of interactive ways. In this introductory session, participants will learn how to tie a data source and create a simple visualization. A case study on how East Carolina University and Brody School of Medicine is using this tool.

Presenter(s) underlined

MedEd Day 2021

Title: Psychological Type and Academic Performance in the Fundamental Phase of Medical School (Work-In-Progress Review)

Authors: Acheampong, Cassandra, Infante Linares, Jhojana L., Smith, Jedediah S., Tumin, Dmitry*

Summary: Initial statistical analyses have been completed on the frequency of type preferences, personality types, and pair preferences within each cohort, aggregated for the three years and from national benchmarking data. Early results show that frequencies are statistically different from national norms, which is expected as medical school admissions are highly selective. Effects related to student outcomes have yet to be studied and may depend on the approval of an IRB. Additional outcomes and variables may be considered to define the research question further or identify future research areas.

2021 AAMC Information Technology in Academic Medicine Virtual Conference

Title: Visualizing Match results with a focus on Institution's mission and business process improvement (Digital Demonstration)

Authors: Infante Linares, Jhojana L., Smith, Jedediah S., Rehfeld, Otto, Stroup, Scotty, Wooden, Kendall, Molina, Hector

Summary: This dashboard visualizes year-to-year analytics and analyzes mission-related outcomes using NRMP Match results. The dashboard was used to help disseminate Match results to students' families during the COVID-19 crisis.

Presenter(s) underlined

*Collaborator

2021 AAMC Information Technology in Academic Medicine Virtual Conference

Title: The development of diversity reporting tools: Successes, Challenges, and Future Impacts (Digital Demonstration)

Authors: Smith, Jedediah S., Infante Linares, Jhojana L., Corral, Irma, Campbell, Kendall M., Bright, Cedric M.

Summary: A case study in the use of a quality improvement tool to conduct regular assessments of collected data regarding diversity and inclusion and disseminate those results to provide actionable information to drive continuous change. Discussion of the case study will include constraints and barriers that limit the growth of transparent, systemic processes.

Title: An Adaptable Framework for Survey Data Management in Medical Education (Poster)

Authors: Rehfeld, Otto, Smith, Jedediah S., Infante Linares, Jhojana L., Stroup, Scotty, Yeduri, Huma, Molina, Hector

Summary: This poster outlined how to process survey results from the AAMC for input into the survey data management framework by creating versioning documents and a question bank.

Title: Development of the faculty diversity snapshot report: a case study in quality improvement (Poster)

Authors: Smith, Jedediah S., Infante Linares, Jhojana L., Corral, Irma, Campbell, Kendall M., Bright, Cedric M.

Summary: The production and delivery of annual faculty diversity snapshot reports are intended to increase communication of diversity data, metrics, and benchmarks to department chairs and deans. This poster outlined how to develop a quality improvement tool to conduct regular assessments of collected data regarding diversity and inclusion and disseminate those results to provide actionable information to drive continuous change.

Presenter(s) underlined

Braxton, M. M., Infante Linares, J. L., Tumin, D., & Campbell, K. M. (2020). Scholarly productivity of faculty in primary care roles related to tenure versus non-tenure tracks. *BMC Medical Education*, 20(1). <https://doi.org/10.1186/s12909-020-02085-6>

Campbell, K. M., Corral, I., Infante Linares, J. L., & Tumin, D. (2020). Projected Estimates of African American Medical Graduates of Closed Historically Black Medical Schools. *JAMA Network Open*, 3(8). <https://doi.org/10.1001/jamanetworkopen.2020.15220>

Campbell, K. M., Infante Linares, J. L., Tumin, D., Faison, K., & Heath, M. N. (2020). The Role of North Carolina Medical Schools in Producing Primary Care Physicians for the State. *Journal of Primary Care & Community Health*, 11, 215013272092426. <https://doi.org/10.1177/2150132720924263>

Campbell, K. M., Tumin, D., & Infante Linares, J. L. (2021). The Need for Better Studies of Impostor Syndrome in Underrepresented Minority Faculty. *Academic Medicine*, 96(5), 617–617. <https://doi.org/10.1097/acm.0000000000003981>

Tumin, D., Linares, J., Moore, S. A., & Campbell, K. (2021). In Response to Deutchman et al. *Family Medicine*, 53(1), 75–76. <https://doi.org/10.22454/fammed.2021.646000>



Jhojana Infante Linares, Director

Mrs. Infante Linares has experience in data management, reporting, and analysis in various industries and has worked in higher education institutions for the past seven years.

In her current role, she supports the Brody School of Medicine in the development of an educational data warehouse and providing tools for data-driven decision-making and continuous process improvement.

She holds a Master of Science in Engineering Management and a Bachelor of Science in Industrial Engineering from the University of South Florida.



Jedediah Smith, Data Analyst

Mr. Smith has worked with educational datasets and technologies throughout his two decades of experience in public education.

His current role is to assist the Brody School of Medicine in the analysis and visualization of data, mainly focused on supporting internal and external stakeholders with reporting, data management, and communication related to outcomes.

He holds a Master of Science in Instructional Design and Technology from East Carolina University and a Bachelor of Science in Biology from Duke University.



Otto Rehfeld, Data Entry Clerk

Mr. Otto Rehfeld has worked with data entry and management during his time in the Air Force and as a manufacturing manager for a board game company.

Currently, he assists Brody School of Medicine students, staff, and faculty by managing data entry and creating data visualizations to inform decision making.

He graduated with a Bachelor of Science in Information Technology from the University of Phoenix and has an Associate Degree in Intelligence Studies and Technology from the Community College of the Air Force.

We thank all our partners and stakeholders for the time spent in reviewing business processes, provide feedback and invaluable guidance, and seek four our knowledge and expertise.

ODAS looks forward to continue our work and collaborations across Brody School of Medicine, Health Sciences, ECU and external organizations.

YEAR IN REVIEW

2020

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Division of Academic Affairs

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