

Executive Summary

This document provides a detailed summary of the findings by the ad hoc task force charged to explore “the pros and cons of integrating the North Dakota State University (NDSU) Graduate School and Interdisciplinary Studies with the office of Research and Creative Activity (RCA)”. To address the charge, we compared detailed organizational structures at NDSU and key metrics (chapter 2), organizational structures of NDSU to those at peer institutions (chapter 3), key metrics of Carnegie Classifications and NDSU (chapter 4), and conducted a campus survey (chapter 5).

The task force reviewed the organizational structures, department functions, and positions of both offices at NDSU, and compared staffing for both graduate schools and research offices at 15 peer institutions. The task force concluded that functions of the offices and position responsibilities do not overlap, with graduate school roles focusing on academic responsibilities and the research office providing various research-related services to campus. Similar comments were also reflected in survey responses. The comparison of the two units at NDSU with similar units at peer institutions revealed significant variability in staffing levels, job titles/duties, and office services. The R&D expenditures and graduate enrollments also had significant variability. Comparisons among the 16 institutions, NDSU is ranked 8th in R&D expenditures, 14th in research positions, 12th in graduate enrollment, and 8th in graduate school positions.

The committee used several methods to analyze the organization and administration of graduate education at other institutions. A survey of all fifty 1862 Land Grant Schools found that 47 of the 50 institutions have separate administrative offices for graduate education and research, with only three having combined research and graduate studies, although in different ways. For example, the University of Arkansas has the graduate school combined with international education, jointly administered by the Graduate School and International Education Office. A search for institutions that had combined offices of research and graduate education yielded 22 institutions ranging in total enrollments of 3,000 up to 35,000, and Carnegie rankings of M1, M2, D/PU, and R2 institutions. Other findings include that some large (>30,000 students) R1 institutions have Graduate Schools and Research Offices within specific schools or colleges in addition to the institution’s centralized office for graduate education and office for research. Also provided are examples of institutions that have separated their once-combined research and graduate education units with examples of the rationales for reorganization. Importantly, in 2019 the Council of Graduate Schools conducted a survey of organization and administration of graduate education, and based on responses from the 200 universities that participated, the finding affirms that the majority of responding institutions organizes the responsibilities of graduate education within an organizational unit led by a dean.

A study of Carnegie Classifications illustrates that NDSU is at the cusp between the two highest Doctoral university rankings. The current ranking of NDSU is highly competitive in terms of two important measures, research expenditure and broad PhD production. Interdisciplinary

programs at NDSU provide tremendous potential to be a real strength by leveraging the research expenditures and graduate student PhD realization necessary to consistently retain Carnegie's highest ranking. To make that happen, existing disincentives for departments to support their faculty involvement within these programs need to be removed. In particular, there needs to be a model whereby the accounting for students tracks credit to the unit funding and mentoring the student. Internal and external student counting by the host department should be allowed for students in interdisciplinary programs. This would enable departments and colleges to get credit in the internal counts that impact budget allocations, and external counts (USNews, ASEE, etc.) that impact international ranking of programs.

The task force prepared a survey comprising eight content questions and one demographic question (Primary Role at NDSU). The response rate to the survey varied among campus groups with administrators and faculty response at 17%, graduate students 2.48%, and staff under 2% with an overall rate of 4.79%. The majority of respondents (76.2%, 138 responses) did not support the integration of the units, but if it were to happen there needs to be a very clear plan with justified outcomes. The collective consensus **from the survey** is that fundamental philosophical, functional, or financial needs to merge do not exist. Also, there are consistent concerns that a merger has the potential to significantly diminish research reputation and support at NDSU. There is support for higher levels of staff positions in both programs to advance NDSU graduate education and research missions.

Situational factors: mood on campus is that hiring is not currently feasible and would complicate any potential merger

The task force did discuss the potential for collaboration between RCA and the Graduate School, such as RCA providing graduate students research professional development opportunities through the existing skills academy framework. Another pathway to increase synergies, is for highly interdisciplinary teams with needs for both services, to best leverage the needs from both organizations, and move forward in terms of graduate education and research funding. One recommendation from this task force is for NDSU to devise mechanisms for such a nimble structure to become manifest. Not within either/or organization, but with support from each to contribute towards our collective successes.

Based on our findings from each of these areas, the task force also voted on whether to recommend a merge. The vote of the task force members was unanimous to not merge. This is supported by the detailed analysis found in the following chapters. Based on the analysis, in Chapter 6 the task force presents final thoughts for considerations moving forward.

Chapter 1. Introduction

Members of the ad hoc task force exploring integration of the College of Graduate and Interdisciplinary Studies and the Office of Research and Creative Activity was formed on June 15, 2020. Interim Provost Fitzgerald met with the NDSU Graduate School during their staff meeting on June 22, 2020. On July 7, 2020 task force Chair Dean Wallin met with the staff of the Graduate School via Zoom in the morning, and the task force had its first meeting via Zoom in the afternoon. The deadline was to provide a report to the Office of the Provost prior to the beginning of 2021. The task force scheduled meetings at the start of fall: August 4; September 1, 15, and 29; October 13 and 20; November 10; December 8, 18, and 22, 2020. This document was submitted as a PDF to Provost Fitzgerald via email on December 28, 2020.

Together, we collected information on the budgets, structures and functions of the College of Graduate and Interdisciplinary Studies and the Office of Research and Creative Activity here at NDSU and at 1862 Land-Grant Institutions; explored the relationship of research and graduate education administration at other institution with combined units or recently separated units; and key metrics of Carnegie Classifications and NDSU. A short Qualtrics survey was sent to faculty, graduate students, and staff requesting feedback on the potential pros and cons of an integration.

Members of the ad hoc Task force are:

- Kimberly Wallin, Professor and Dean of College of Science and Mathematics; Chair of Exploration Ad Hoc Task Force
- Phillip McClean, Professor and Director of Genomics and Bioinformatics Program, Plant Sciences, College of Agriculture, Food Systems, and Natural Resources
- John Cox, Professor, History, Philosophy and Religious Studies, College of Arts, Humanities, and Social Sciences
- Tim Peterson, Professor and Chair of Transportation, Logistics and Finance, College of Business
- David R. Steward, Professor and Chair of Civil and Environmental Engineering and Chair of Construction Management and Engineering, College of Engineering
- Scarlet Gray Bernard, Thesis and Dissertation Processor, College of Graduate and Interdisciplinary Studies
- Bryan Christensen, Professor, Health, Nutrition and Exercise Sciences, College of Human Sciences and Education
- Sheri Anderson, Associate Vice President for Research Development, Office of the Vice President for Research and Creative Activity
- Matthew Warner, Ph.D. candidate, English, College of Arts, Humanities, and Social Sciences

Chapter 2. NDSU: Detailed Organizational Structure and Key Metrics

Summary

The task force reviewed the organizational structures, department functions, and positions of NDSU's College of Graduate and Interdisciplinary Studies and the Office of Research & Creative Activity. We also provided FTE for each position to demonstrate possible cost savings, in case there was overlap across units. This department function information, along with organizational charts, were included as reference materials for campus survey respondents. This information was provided to give survey respondents the opportunity to see how the offices are organized, as well as details on positions within each department for comparison purposes.

The task force also looked at staffing for both graduate schools and research offices at peer institutions to compare levels of staffing. We included the number of staff listed at these institutions, although the total staff number may not represent the actual FTE totals in each unit.

The College of Graduate & Interdisciplinary Studies at NDSU is led by a dean. It has a total of 16 staff that covers 13.92 FTE, working in teams of Admissions & Recruitment, Business Operations, Student Support Services, and the Center for Writers. The Center for Writers is not a common feature within graduate schools--in fact, we are one of five in the nation with a dedicated Graduate Center for Writers--although it does include the dissertation and thesis reviewing and processing which many graduate schools have. There are graduate student positions in the Graduate School office and in the Center for Writers (5 total at 0.5 FTE each), and the Center for Writers also employs graduate students at 0.25 FTE each (the number varies depending on availability) and up to 12 undergraduate students at 0.25 FTE each as peer writing consultants.

The Research and Creative Activity office is led by a Vice President. It has a total of 30 staff that covers 28.0 FTE, working in teams of Industry Engagement and Intellectual Property, Research Operations, Research Development, Research Integrity and Compliance, and Sponsored Programs Administration. The Electron Microscopy Center Director reports to the Vice President and works with the Research Operations team. Four staff positions on the Industry Engagement and Intellectual Property team have split appointments with the NDSU Research Foundation. The Water Resources Research Institute, a U.S. Geological Survey funded program, reports to the Vice President and is managed by an NDSU Professor and staff member in part-time capacities.

The following sections show the teams and positions in the College of Graduate & Interdisciplinary Studies and in the Office of Research and Creative Activity; a table of peer institutions compares NDSU in terms of Research Activity Level, R&D Expenditures, Graduate Student Enrollment, and the number of positions in the research offices and the graduate

schools; budgets for NDSU's RCA and College of Graduate & Interdisciplinary Studies; and key findings.

College of Graduate & Interdisciplinary Studies

Department Function

The Graduate School promotes excellence in graduate education by promoting consistent, responsive support and open communication for students and the NDSU community.

Dean: Serves as the Chief Academic Officer of the College and in this capacity is responsible for the operation of the Graduate School, Interdisciplinary Graduate Program, and the Center for Writers. 1.0 FTE

Recruitment and Admissions

The recruitment and admissions team processes the applications of all graduate students and works to support graduate student recruitment efforts for the university.

Recruitment Coordinator: Plans and executes graduate student recruitment activities; manages communication, outreach, and promotional efforts designed to engage prospective graduate students and applicants; creates queries and analyzes data from CRM to inform strategic decision-making and monitors progress regarding graduate student recruitment and enrollment efforts. 1.0 FTE

Graduate Admission Coordinator: Serves as a liaison among applicants, academic departments, and the Graduate School regarding graduate applications and recommendations for admission; oversees the admission process to ensure accurate and complete applications are submitted to the department, decisions are being made in a timely fashion by the department, and letters of admission/refusal are sent to applicants. (1.0 FTE)

Customer Service Associate: Supports the internal and external functions of the office by providing frontline communication and reception; assisting with the recruitment and admission of new graduate students. (50%) (0.5 FTE; position is split with the Business Operations team)

Business Operations

The business operations team reviews and manages graduate assistantship payroll forms including contracts, background checks, and annual training, processes graduate tuition waivers, and serves as frontline communication to maximize the efficiency of the Graduate School.

Business and Operations Manager: Responsible for managing the day to day business and operations aspects of the Graduate School and Interdisciplinary Studies, Center for Writers, and Admissions and Recruitment. Oversees graduate assistantship process including contracts,

background checks, annual training, and graduate tuition waivers. Specific functions of the position include financial and operations management, development of budgets and expenditure reports, payroll for staff, graduate assistants, and hourly students, human resources, managing building operational issues, and other projects related to initiatives of the Graduate School. (1.0 FTE)

Business Coordinator: Provides administrative support to the Dean and Associate Dean of the Graduate School & Interdisciplinary Studies; preparing reports and providing support for the Business and Operations of the Graduate School; support Recruitment and Admissions with application process; assist with event planning; supervise, train, and hire office assistants. Review, process and track HR/Payroll forms and verify and track graduate tuition waivers for non-academic departments. Review and track contracts and required annual trainings for all graduate assistantships. (1.0 FTE)

Business Coordinator: Provides assistance with financial and payroll transactions; provide general office support to the College; and provide administrative services for the Graduate School; post ledgers and journals; handle all accounts payable processing for the Graduate School, Center for Writers and Interdisciplinary Programs. Review, process and track HR/Payroll forms and verify and track graduate tuition waivers for Colleges of Arts, Humanities and Social Sciences, Business, Graduate & Interdisciplinary Programs, and Human Science and Education. (1.0 FTE)

Business Coordinator: Preparing reports and providing support for the Business and Operations of the Graduate School; provide administrative support to the Graduate School and Interdisciplinary Studies; assist with the recruitment and admission of new graduate students (50%); monitor Graduate School email account. Review, process and track HR/Payroll forms and verify and track graduate tuition waivers for Colleges of Ag, Food Systems & Natural Resources, Engineering, Health Professions and Science & Mathematics. Review and track lab/chemical safety training for all graduate assistantships. (0.5 FTE; position is split with Recruitment & Admissions team)

Office Assistant: Supports the Business Operations Team, providing receptionist duties as the first point of contact and provides office support for the administrative functions of the Graduate School. (2-50% - students).

Academic Student Support

Supports graduate programs and graduate students and oversees academic policies and procedures approved by the Graduate Council.

Academic Support Coordinator: Serves as a liaison among the Graduate School, students, and the department; monitors students' progress, interprets policy, and serves as a resource for

academic departments. The Academic Support Coordinator also coordinates and supervises the Academic Support Specialists. (1.0 FTE)

Academic Support Specialist: Serves as a liaison among the Graduate School, students, and the department; monitors students' progress, interprets policy, and serves as a resource for academic departments. (Number of staff: 2) (2 at 1.0 FTE)

Graduate Professional Skills Academy Coordinator: Manages the GPS Academy through the myNdsu system; develops the weekly GPS Academy events email; hosts information sessions on the GPS Academy for students and faculty; schedules and coordinates GPS Academy events; works with graduate school staff to expand professional development programming; identifies on- and off-campus programming; attends meetings as scheduled; assists with Graduate School events (new student orientation, TA Training, 3 Minute Thesis competition); special projects as assigned. (50% student)

Center for Writers

The CFW helps graduate students develop into effective writers by doing the following: providing expert 1-on-1 assistance in academic writing, from disquisitions to course documents; conducting weekly writing workshops and semiannual Disquisition Boot Camps; teaching graduate writing courses; and providing support to faculty in writing and teaching of writing. The CFW also provides writing support to undergraduate students and coordinates with other units on campus to improve writing at NDSU.

Director: Administers vertical program of support in academic and professional communication and scholarship for graduate students and faculty, as well as undergraduate students. Communicates and collaborates with units that enhance writing, communication, and scholarship support. Oversees administration, develops and oversees budgets, and hires and supervises staff for the center. Teaches graduate writing courses. (1.0 FTE)

Associate Director: Assists the director in running the CFW, and coordinates and supervises the undergraduate staff and services, including recruiting and training consultants and overseeing the undergraduate budget and scheduling. Also provides guest lectures on writing and liaises with appropriate campus faculty and committees for undergraduate services.(50%) (0.5 FTE)

Senior Writing Consultant: Provides writing support to graduate students and faculty, and develops, coordinates, and provides writing workshops, boot camps, and innovative writing initiatives. (67%) (0.67 FTE)

Graduate Student Office Assistant: Schedules appointments at CFW, maintains data and files, maintains website, prepares promotional materials, and supports consulting and workshop activities. (50% - student)

Graduate Writing Consultants: Conduct 1-on-1 sessions with graduate students, present and assist in presenting workshops, develop writing resources, and participate in professional

development, including presenting at conferences. (25% - students & 1 ¼-time staff) (one staff at 0.25 FTE)

Disciplinary Writing Consultant: Fulfills Graduate Writing Consultant functions; in addition, provides writing support required by a specific college, e.g., faculty training, teaching courses, developing discipline-specific workshops. (50% - student)

Undergraduate Writing Consultants: Conduct 1-on-1 sessions with undergraduate students, develop writing resources, and participate in professional development. (12-25% - students)

Disquisition Processor: Reviews theses, papers, and dissertations for format requirements and clarity; educates students and faculty about the review process; coordinates and supervises preparation of final copies for submission to library; coordinates and conducts workshops on procedures for preparing and submitting disquisitions; conducts individual meetings with students; reviews and archives electronic documents. (1.0 FTE)

Assistant Disquisition Processor: Assists processor in reviewing theses, papers, and dissertations for format requirements and clarity; coordinates and supervises preparation of final copies for submission to library; and reviews and archives electronic documents. Provides support for the disquisition processor in educating students about the disquisition review process. (50%) (0.5 FTE)

Interdisciplinary Directors

The Interdisciplinary Program are led by Directors who are faculty members from one of the program's participating departments. The directors report to the Dean of the Graduate School, and generally receive one month summer salary as compensation for fulfilling their responsibilities.

Cellular & Molecular Biology: Responsible for administering the CMB graduate program. Serves as Chair of the CMB Steering Committee; directs recruiting and admissions; fosters interdisciplinary scholarship through periodic workshops and other scholarly activities; coordinates program activities with other academic units; completes university reports required for academic programs (assessment, program review, etc.); communicates with the deans and chairs of constituent departments; contributes to a positive work environment through cooperation and collaboration by developing and maintaining good working relationships with faculty, staff, and students; promotes an inclusive community of scientists in CMB; attends meetings for program administrators on behalf of the program.

Environmental & Conservation Sciences: Responsible for administering the ECS graduate program. serves as Chair of the ECS Steering Committee as well as the ECS Recruiting Committee, ECS Admissions Committee and other ad-hoc ECS subcommittees. Provides leadership for sustainable growth of ECS program; Lead student recruitment efforts; Foster interdisciplinary scholarship through weekly Greenbag Seminar Series, periodic workshops and other scholarly activities; coordinates program's activities with other departments; teaches ECS

Seminar at least once each year; arranges for ECS 770 (Environmental Law and Policy) to be taught every year; completes university reports required for academic programs (assessment, program review, etc.); effectively communicates with the deans and chairs of constituent departments; contributes to a positive work environment through cooperation and collaboration by developing and maintaining good working relationships with faculty, staff, and students; promotes an inclusive community of scientists in ECS; facilitates collaboration among faculty and regional scientists; attends meetings for program administrators including a) Graduate Leaders Meetings, b) Interdisciplinary Program Directors Meetings; c) Chair's Council.

Genomics: Administers the interdisciplinary graduate program in Genomics and Bioinformatics (G&B). Serves as the chief administrative officer of the G&B program; provides leadership to continue the growth of the G&B interdisciplinary program; leads student recruitment efforts; meets regularly with the G&B program advisory committee and hold an annual faculty meeting; fosters collaborative, interdisciplinary research and proposal submissions; coordinates the program's activities with other campus entities; prepares an annual budget for the G&B program; supervises a part-time administrative assistant; teach a "Current Topics in Genomics" course each fall and spring semester; completes university reports required for academic programs; effectively communicates with the deans and chairs of constituent departments; meets annually with the deans of colleges with active G&B faculty members; promotes diversity in the G&B program.

Material & Nanotechnology: Provides strong leadership in developing the educational and research activities of the Materials and Nanotechnology interdisciplinary program; oversees all management functions for this program; works closely with academic departments and with the staff and research faculty of the NDSU Center for Nanoscale Science and Engineering (CNSE) and the forthcoming Materials Science initiative at NDSU's Center for High Performance Computing (CHPC).

STEM: Provides leadership for the interdisciplinary STEM Education PhD program. The director will be responsible for the following STEM Education PhD activities; convenes chair meetings of the STEM Education PhD Program Steering Committee; prepares and supervises budgets, and coordinate questions of budget with the Dean of Graduate & Interdisciplinary Studies and staff as well as other administrators as appropriate; oversees the student application process, serve as contact person for graduate student inquiries, and maintain public relations (websites, printed media, etc.); maintains communications with the STEM Education PhD program faculty and serve as advocate for both their needs and those of this program; attends meetings of the NDSU Interdisciplinary Program directors, and other departmental/program meetings as appropriate.

Research and Creative Activity

The Division of Research and Creative Activity is led by the **Vice President for Research and Creative Activity (RCA)**. RCA provides centralized support for sponsored program activity across the university. Details on departmental functions are described below.

Assistant to the Vice President (1 FTE)

Provides administrative support to the Vice President and is the HR coordinator for the RCA Office.

Water Resources Research Institute (WRI)

Director, Water Resources Research Institute

The WRI is funded annually through a U.S. Geological Survey grant. The WRI Director is an NDSU professor of civil and environmental engineering.

Finance & Communications, Water Resources Research Institute

This grant funded role is filled by an NDSU staff member.

Industry Engagement and Intellectual Property

Industry Engagement and Intellectual Property is composed of the Business Development Unit and the Technology Transfer Office. This group aims to maximize the opportunities for industry-sponsored research and licensing of intellectual property through streamlined intellectual property discussions during negotiation of sponsored research agreements and continuity for research sponsors interested in licensing technologies developed at NDSU.

Executive Director (0.6 FTE) – position is split with NDSU Research Foundation

Authorized signature for industry agreements; provides overall leadership for Industry Engagement and Intellectual Property; review of invention and plant disclosures, oversight of export controls.

Assistant Director for Business Development (1.0 FTE)

Authorized signature for industry sponsored awards, non-financial agreements, and subawards; industry-sponsored award negotiation; industry sponsor liaison.

Business Coordinator (0.5 FTE) – position is split with NDSU Research Foundation

Receipt and recording of invention disclosures, federal compliance for reporting and tracking of inventions developed with federal funds.

Business Development Coordinator (0.85 FTE) – position is split with NDSU Research Foundation

Assist with activities within Business Development, database entry and monitoring, special projects.

Business Development and Licensing Associate (0.5 FTE) – position is split with NDSU Research Foundation

Outreach to campus regarding intellectual property, review of invention disclosures, conducting prior art searches.

Research Operations

The Operations group provides core capabilities to support university research and education through centralized, shared resources including instruments, labs and expertise. Physically, these resources are located in the Research 1 Addition, Research 2, and the USDA Northern Crop Science Buildings. Operationally, they are organized as two recharge centers comprising approximately 150 instruments acquired through various grants and other means at an investment of over \$30M. The Electron Microscopy Center in the USDA building provides comprehensive imaging and analysis services. The Materials and Engineering Research Core in R1A and R2 supports materials synthesis and characterization, microfabrication, device packaging, and a variety of testing services.

In addition to the recharge centers, the Operations group also provides financial management for RCA and day-to-day building operations support for the numerous occupants of the three research buildings (R1, R1A, and R2). In addition to RCA staff, space in the buildings is occupied by the following organizations: Department of Coatings and Polymeric Materials, Materials and Nanotechnology Program, Department of Chemistry and Biochemistry, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering, Agriculture and Biosystems Engineering, Geosciences, Center for Computationally Assisted Science and Technology, Center for Bioplastics and Biocomposites, ND EPSCoR, USDA National Agricultural Statistics Service, Elinor Coatings LLC, Uniqarta LLC, and CrossFire Technologies Inc.

Director of Research Operations (1.0 FTE)

The focus of this position is to leverage the equipment and laboratory facilities in the Research and Technology Buildings that the Office of Research and Creative Activity oversees to advance NDSU's research capabilities; coordinating use and terms for use of research buildings and equipment in public-private partnerships that align with and enhance NDSU's mission; providing oversight of facilities, budget, and personnel associated with the unit; and other support of research initiatives as assigned. One such research initiative is unmanned aircraft/autonomous vehicles for precision agriculture and other research applications.

Fabrication Technician (1.0 FTE)

Preventive maintenance, repair, training, and operation of equipment in the recharge center. Areas of responsibility include the Device Packaging Laboratory and the Reliability/Failure Analysis Laboratory. The Device Packaging Lab operates in the Class 10,000 cleanroom area and is a partner with the University of Minnesota in their NSF funded National Nanotechnology Critical Infrastructure (NNCI) program. This position is also responsible for several materials characterization instruments including the X-ray Inspection System, Surface Acoustic Microscope, Tensile Tester, Cross-Sectioning Equipment, and Elemental Analyzer.

Engineering Technician (1.0 FTE)

Preventive maintenance, repair, training, and operation of equipment in the recharge center. This position is responsible for the Microfabrication Laboratory operating in the Class 100 cleanroom. The lab specializes in thin film deposition and photolithography processes for various applications including biomedical device sensors. In addition, this position has the primary responsibility for the Materials Characterization and Analysis Lab and oversees the thermo-mechanical instrument suite, X-Ray Diffraction, X-Ray Fluorescence, and Nuclear Magnetic Resonance.

Senior Engineer (1.0 FTE)

Preventive maintenance, repair, training, and operation of equipment in the recharge center. Responsible for operation of the Combinatorial Materials Research Lab that is utilized for rapid synthesis and characterization of coatings for many applications including marine environments. The facility also includes a pilot lab where scale-up reactors are used to synthesize larger quantities of materials for evaluation. This position is also responsible for X-Ray Photoelectron Spectroscopy, High Performance Liquid Chromatography, and Liquid chromatography Mass Spectrometry characterization instruments. The position is funded ½ time by appropriated funding and ½ time by grant funding.

Senior Business Administrator (1.0 FTE – also works 20% with SPA)

Financial management for RCA including the budget process, facilitating/monitoring expenditures, and ensuring compliance with policies and regulations. Manages payroll and payroll forms. Oversees maintenance of accounting records and records retention for the unit. Serves as the IT coordinator for RCA. Manages financial aspects of the recharge center including budgeting and financial tracking for recharge center tools; administering purchase orders and processing invoice payment transactions, issuing electronic IDBs for internal clients and invoices to external clients; supporting project quotations and coordination with clients. Provides support to Sponsored Programs Administration (20% of time) to assist with requests to Sponsors for proposal & award changes.

Operations and Program Assistant (1.0 FTE)

Day-to-day contact person for building/operations issues. Submits service requests to FAMIS and coordinates with Facilities Management personnel on resolution of issues. Submits card key access requests for R1/1A/2 buildings. Coordinates with campus police and safety when

issues arise. Communicates with occupants of the buildings on maintenance, safety, and other important messaging. Assists Senior Business Administrator with data entry, records retention and other tasks.

Electron Microscopy Center Director (1.0 FTE)

Operation and maintenance of the microCT and scanning and transmission electron microscopes, including specialized analytical techniques such as energy-dispersive spectroscopy for elemental analysis and electron energy loss spectroscopy (EELS).

Electron Microscopy Center Laboratory Manager (1.0 FTE)

Instrument operation, preparation of biological and materials samples for light and electron microscopy (including fixation, dehydration, critical point drying, embedding, staining, and sputter coating), and ultramicrotomy (ultrathin sectioning at 60-80 nm) for transmission electron microscopy, as well as office management, scheduling, and billing.

Research Development

The mission of the Research Development unit is to enhance NDSU's ability to compete for external funding by providing resources, training, and assistance related to developing successful research programs. Activities of the research development office include announcing funding opportunities, managing the funding opportunity database subscription and offering training and support for users of the system, developing and coordinating grant writing workshops and professional development opportunities for faculty, working with RCA Faculty Fellows on programs for early career and associate professors, communicating research results through a weekly newsletter, reports, news releases and articles, providing proposal development services including editing and review of proposals for compliance with agency requirements, assisting with the coordination and development of interdisciplinary proposals, managing internal funding programs such as travel awards and research support services, support for broader impacts, and developing proposal writing resources and tools. Research Development also coordinates NDSU EXPLORE, an annual undergraduate research and creative activity symposium.

Associate Vice President (1.0 FTE)

Management of RD unit, proposal development support, RCA Faculty Fellow program, limited submission process, funding opportunities, workshops and professional development programming, internal travel funding and RSS program, RCA undergraduate research programs.

Communications Manager (1.0 FTE)

RCA communications support, science communication, RCA newsletter and website, faculty and student research and creative activity articles and news releases, PIVOT training.

Research Development Coordinator (1.0 FTE – also serves as back-up to Assistant to Vice President)

Funding opportunity assistance and coordination, RCA newsletter, internal travel funding and RSS program, NDSU EXPLORE, proposal development assistance, workshops and programming support, limited submission process.

Research Integrity and Compliance

Research Integrity supports Institutional Review Board (IRB), Institutional Animal Care and Use (IACUC), Institutional Biosafety Committee (IBC), the Conflict of Interest Committee (COIC), and Export Control operations; oversees financial conflicts of interest reviews; provides veterinary animal care and consultation; and subject matter expertise on promoting research integrity and compliance with federal regulations.

Attending Veterinarian and Director of Animal Resources (1.0 FTE)

IACUC protocol development, animal procedure and surgical consultation, animal health monitoring, training oversight & development.

Research Compliance Administrator, IACUC (1.0 FTE)

IACUC protocol development and processing, animal facility oversight, animal welfare education.

Research Compliance Administrator, IBC and COI (1.0 FTE)

IBC protocol development and processing, Conflict of Interest management, Responsible Conduct of Research resources.

Research Integrity and Compliance Administrator, Export Controls (0.5 FTE)

The NDSU Export Controls office protects NDSU's open research policy and the free interchange of information among scholars while complying with U.S. export control laws.

Research Compliance Administrator, IRB (1.0 FTE)

IRB protocol development and processing, human subjects protections education.

Sponsored Programs Administration

The Sponsored Programs Administration (SPA) office is the central administrative support office under the Vice President for Research and Creative Activity unit. The office encourages and supports university faculty and staff in their pursuit of external funding to conduct research or other scholarly activity, with an emphasis on administrative functions that advance a culture of compliance with applicable regulations. SPA provides budget review and institutional signature

for all external proposal submissions, manages electronic application submission processes, and negotiates awards received from external sources for sponsored program activities on behalf of the university. The office also assists in non-financial post award administration matters.

Associate Vice President (1.0 FTE)

Management of SPA unit, authorized signature for proposals/awards (AOR); policy development; non-industry award negotiation; sponsor liaison.

Assistant Director (1.0 FTE)

Novelution system sponsored research module implementation lead; Authorized signature for proposals/awards (AOR); non-industry award negotiation; assistance with pre-award and non-financial post-award issues; sponsor liaison.

Budget and Program Officer (2.0 FTE)

Budget review; assistance with proposal forms; electronic proposal submission; assistance with budget revisions and PI changes; assistance with no-cost extensions and advanced spending requests, guidance on federal submission portals.

Award and Program Officer (1.0 FTE)

Authorized signature for proposals/awards (AOR); lead proposal reviewer; non-industry award negotiation; assistance with pre-award and non-financial post-award issues; sponsor liaison.

Program Assistant (1.0 FTE)

Facilitate award processing; assistance with no-cost extensions and advanced spending requests; resource for proposal/award processes; webpage maintenance.

Research Informatics Analyst (1.0 FTE)

Statistical proposal/award reports; Power BI interactive report creation/maintenance; NSF HERD Survey data collection and reporting.

Peer Institution Staffing

Data from peer institutions was obtained from institutional websites and reviewed to look at position numbers in similar offices. Graduate student enrollment and NSF R&D Expenditures were included for comparisons. Both research and graduate school offices differed across universities, therefore adjustments were made as able for functions the committee knows are not within the NDSU RCA and GS offices. As examples, some institutions have large institutes, post award accounting, and high performance computing centers reporting to the VPR. Examples of how Graduate School offices vary include whether admissions and thesis and

dissertation review happens in-house or within other parts of the university. Every effort was made to make the information comparable based on office functions. *The University of Arkansas Graduate School includes International Education.

Peer Institution	Research Activity Level	R&D Expenditures (in million)	Graduate Student Enrollment	Research Office Positions	Graduate School Positions
University of Rhode Island	Higher	104.5	2999	29	14
University of Maine	Higher	106.7	2039	37	14
University of Idaho	Higher	111.6	2273	37	8
University of Wyoming	Higher	113	2452	19	6
University of Vermont	Higher	129.9	2067	50	10
University of Alaska Fairbanks	Higher	140.9	975	16	4
University of Nevada-Reno	Higher	144.4	3533	35	17
North Dakota State University	Higher	145.7	2371	28	17
University of Arkansas	Highest	175.5	4392	33	78*
University of Delaware	Highest	186.2	4164	52	14
Clemson University	Highest	213.4	5282	48	21
The University of Tennessee	Highest	259.6	6079	56	22
University of Connecticut	Highest	269.7	8279	55	15
University of Nebraska-Lincoln	Highest	308	4990	68	23
Iowa State University	Highest	361.2	5371	50	18
University of Kentucky	Highest	393	7046	114	26

1.0 position ≠ 1.0 FTE

Departmental Budgets

The task force reviewed budget information for FY2021. Both unit budgets include appropriated and local funding and support campus activities. In addition to office operating, expenditures

include equipment matching funds, equipment repair, faculty travel, and research support funding. Reflected here are the projected expenditures for this fiscal year.

Acct Dept	Name	Budgeted Expenses FY21	Acct Dept	Name	Budgeted Expenses FY21
2820	Graduate School		4000	Research and Creative Activity	
	<i>Personnel</i>	1,164,146		<i>Personnel</i>	2,583,610
	<i>Operating</i>	135,934		<i>Operating</i>	571,633
				<i>Equipment/Other Expenses</i>	120,577
2825	Interdisciplinary Studies				
	<i>Personnel</i>	322,379	4350	Electron Microscopy Center	
	<i>Operating</i>	43,738		<i>Personnel</i>	150,708
				<i>Operating</i>	225,358
2827	Graduate Center for Writers				
	<i>Personnel</i>	174,775		<i>Total Personnel</i>	2,734,318
	<i>Operating</i>	1,041		<i>Total Operating</i>	796,991
				<i>Expenses</i>	120,577
	<i>Total Personnel</i>	1,661,300		Total	3,651,886
	<i>Total Operating</i>	180,713			
	Total	1,842,013			

Key Findings

The task force concluded that functions of the offices and position responsibilities are quite different, with graduate school roles focused on academic responsibilities and the research office providing various research-related services to campus. Similar comments were also reflected in survey responses. The comparison of the two units at NDSU with similar units at peer institutions revealed significant variability in staffing levels, job titles/duties, and office services. Compared with R&D expenditures and graduate enrollments, NDSU is ranked 8th in sixteen for R&D expenditures, 14th in research positions, 12th in graduate enrollment, and 8th in graduate school positions.

The task force discussed the potential for collaboration between offices, such as RCA providing graduate students research professional development opportunities through the existing skills academy framework.

Chapter 3. Organizational Structures: Peer Institutions and NDSU

Peer and Other Institutions

The administration of graduate education and research was investigated by considering the organization structures in all 1862 land grant universities in the US, institutions that have a combined research and graduate unit, and a few institutions that have reorganized these units in the recent past. Only three of the 50 land grant universities have a combined administration structure for graduate education and research administration. Beyond the 1862 land grant universities, a search for schools with combined graduate education and research administration (using search terms “Office of Research and Graduate Studies,” “Office of Graduate Education and Research,”) identified 16 public institutions and 6 private institutions that have these activities administered by a single office. In addition, data mining of web pages, redirection pages, press releases, annual reports from research offices, and in the case of the University of Delaware, a web page with internal reports, external reports, and a final report, described processes and rationales for splitting apart once-combined units of research and graduate education. Reports from the Council of Graduate Schools provided data from a broader look at graduate education. Based on responses from the 200 universities in the 2019 Council of Graduate Schools Survey of Organization & Administration of Graduate Education, it was concluded that the survey “...affirms that the majority of responding institutions organizes the responsibilities of graduate education within an organizational unit (Graduate School, Graduate College, Office of Graduate Education, Graduate Division, etc.) led by a dean.” In addition, data beyond this survey revealed that 32% of the leaders of graduate education hold the title of Vice-Provost.

Land Grant Institutions

- A complete survey of all fifty 1862 Land Grant Schools found that 47 of the 50 land grant institutions have separate administrative offices for graduate education and research.

Only three of the 1862 Land Grant Schools have combined administration of graduate education and research structural administration. Two have a single person serving as the Vice President for Research and Dean of the Graduate School, and one institution has a vice president for research and a separate person as graduate dean:

- Montana State University – one person serves as the Vice President for Research, Economic Development & Graduate Education (REDGE); a separate person with a dual title serves as the Dean of the Graduate School and an Associate Vice President of REDGE
- New Mexico State University – one person serves as both the Dean of the Graduate School and the Vice President for Research

- University of Maine – one person serves as both the Dean of the Graduate School and Vice President for Research.

Graduate Education Administrative Titling: At the 1862 Land Grant Schools, 68% have graduate education administered by a Dean, and 32% are administered by a person titled as Vice-Provost. That vice-provost is in a separate administration position from the deans of the colleges. In two cases, graduate education is led by a Vice-President.

Research Administrative Titling: At the 1862 Land Grant Schools, 83% of individuals charged with administering research are titled as the Vice-President. The next most frequent title (13%) for the research administration position is Vice-Chancellor.

Alternate Structures

Alternate Structure, Example 1: At the University of Arkansas, graduate and international education are jointly administered by the Graduate School and International Education Office. The office manages graduate students and all international students, both graduate and undergraduate, and all students seeking an educational experience abroad. The office leadership consists of the Dean of the Graduate School and International Education, an Associate Dean of GSIE, and an Associate Dean of IE.

Alternate Structure, Example 2: At some larger institutions (where the total enrollment is 22,000 and higher), a single college or school within the larger institution may have its own office of research and graduate studies in addition to the university's central research office and graduate school. For example: At Auburn University, an R1 institution with around 30,000 students, the College of Veterinary Medicine has its own Office of Research and Graduate Studies. We also found this within Purdue (in the College of Education), Penn State (in the College of Agricultural Sciences), the University of Florida (in the College of Pharmacy), and several others.

Institutions that have split apart their once-combined research and graduate education units

The following institutions had combined offices of Research & Graduate Studies at one time, but later reorganized by splitting the functions again into two units: These include the University of Nebraska-Lincoln, Utah State University, Texas A & M Corpus Christi, Tennessee Technological University, University of Delaware, California State University-Northridge, and American University. Of the Carnegie rankings of these institutions, three of them are R1; four of them are R2. NDSU also ranks among this group, having had a combined Graduate Studies and Research Office which was split apart in 1996 into the Graduate School and Research Administration. During the time periods in question, Dr. Craig Schnell served as Dean for Graduate Studies and Research Administration from 1985 to 1997, Interim Provost from 1995 to 1997, and Provost (2002) and Vice President for Academic Affairs from 1997 to 2011. NDSU's transitions and some of the other institutions' transitions are placed below in a timeline for context. NDSU items are presented in bold font.

- **~1996 – NDSU split Graduate Studies and Research into the Graduate School and Research Administration.**
- **2000 – NDSU’s Research Administration became a separate division under the first Vice President for Research, Creative Activities, and Technology Transfer (RCATT).**
- **2006 – NDSU Graduate School’s name changed to the College of Graduate and Interdisciplinary Studies**
- ~ 2007 – University of Nebraska-Lincoln split their combined Office of Research & Graduate Studies into Research & Economic Development and the Graduate College/Office of Graduate Studies.
- 2008 – The University of Delaware reorganizes and splits the joint leadership position of Vice Provost for Research and Graduate Studies into two vice-provost positions: Senior Vice Provost for Research and Strategic Initiatives and Vice Provost for Graduate and Professional Education.
- 2011 – Utah State University creates a joint Office of Research and Graduate Studies
- 2012 – Texas A&M Corpus Christi divided their Office of Research and Graduate Studies into the Division of Research, Commercialization and Outreach, and the College of Graduate Studies.
- **~2013 – NDSU’s Research, Creative Activities, and Technology Transfer (RCATT) name changed to Research and Creative Activity.**
- 2014 – Tennessee Tech University split their Office of Research and Graduate Studies to form the Office of Research and the Office of Graduate Studies.
- 2016-2017 – The University of Delaware forms a working group to explore splitting their combined Office of Research and Graduate Studies to form the Graduate College and the Office of Research.
- 2019 – Utah State University split their joint Office of Research and Graduate Studies in order to form the Office of Research and the USU School of Graduate Studies.
- 2019 – American University split their Office of Graduate Studies and Research to form the Office of Research and the Office of Graduate Studies.
- 2019 -- The University of Delaware established their Graduate College and conducted a national search for their first dean of the Graduate College.

A Few Example of the Rationales for Reorganization

Through the press releases and annual reports of some of these institutions, we were able to learn the rationale given regarding the reorganization.

Utah State University

Utah State University created a joint Office of Research and Graduate Studies in August 2011, and in January 2019 divided it into two the two function into the Office of Research and the USU School of Graduate Studies. According to a University Affairs press release from January 24, 2019, the decision followed months of discussion and collecting feedback from the deans and faculty members across campus. The USU President Noelle Crockett said of the change,

“These modifications will help improve efficiency and better meet the needs of our growing institution moving forward.” Of the work involved in the changes, the USU Provost Frank Galey said, “There are some Research and Graduate Studies units with overlapping operations between research and graduate education, and we are still looking at how those will move forward within the new structure. A few changes for the new USU Office of Research and School of Graduate Studies, such as creating separate websites, will also take place in the coming weeks, but that is expected to happen smoothly.”

Tennessee Technological University

At Tennessee Technological University, the Office of Research and Graduate Studies was split in January 2014 in order to “proactively [handle] anticipated program growth,” according to their January 24, 2014 news release. They formed the Office of Research and the Office of Graduate Studies. The administrator heading the new Office of Graduate Studies said, “Both research and graduate student administration are time consuming and require a great deal of focus with regard to strategic planning and ongoing activities. Our leadership at Tennessee Tech had the foresight to know that each side needed its own emphasis. With anticipated immediate growth expected in each area, they require individually dedicated staff and facilities.” Other language used in the press release includes:

- The reorganization supports Tennessee Tech’s Flight Plan, a series of initiatives and actions designed to help the university move into its second century.
- As Tennessee Tech takes steps to gain national recognition as a leading technological university in the South, these changes will help faculty and staff meet the needs of students and work to develop strong and distinctive programs. An increased emphasis on graduate studies will attract students from around the nation and globe to the university to study.
- Creating the Office of Graduate Studies ensures that faculty and students will find the academic and administrative support they need, and the university’s graduate programs will be able to continue to grow.

In the Office of Research’s annual report for the following fiscal year, 2015-16, they reported that externally-funded grants and contracts increased 17%.

American University

An April 23, 2019 memorandum from the provost to the American University community titled “Changes in the Organization of the Office of Graduate Studies and Research” announced, “Based on the priorities in our strategic plan and my early assessment of what we need to be successful, I have determined that we need a clear and sharp focus on both our research progress and our development of our graduate programs. To do so, we will restructure each as a separate area of responsibility.”

University of Delaware

The University of Delaware underwent reorganization beginning in 2008 and eventually forming a graduate college in 2019. A collection of internal and external reviews and a final report posted on the Graduate School's website provided insight into their process. Below is a timeline with some key findings and results:

- In 2008, UD reorganized their Office of Research and Graduate Studies. They kept the office combined, but they split the leadership of Vice Provost for Research and Graduate Studies into two vice-provost positions: Senior Vice Provost for Research and Strategic Initiatives, and Vice Provost for Graduate and Professional Education.
- In 2011 UD brought in an external review team to examine the Office of Graduate and Professional Education. The team remarked on the decentralized structure of graduate education at UD and wrote, "Generally speaking, graduate education at first tier institutions and aspirational first tier institutions falls under a Graduate School (or Graduate College) led by an administrator at the rank of Dean." Among the closing recommendations, the team listed that UD should, "Give serious consideration to reorganizing OGPE as a "graduate school" under the leadership of a Graduate Dean."
- Following the release of the UD strategic plan in 2015, an internal report on Graduate & Interdisciplinary Education recommended that UD "Create a College of Graduate and Professional Education with staff and budget commensurate with the size of the UD faculty and graduate student body, and consistent with universities of similar size and research intensity." The author noted under National and Global Trends stated that "Many AAU institutions organize their graduate studies under a separate college, which may or may not itself be degree-granting, and most of these colleges are staffed at a significantly higher staff-to-student ratio than is OGPE."
- In Fall 2016 a University Graduate Working Group was established and charged by the president and provost with planning for the establishment of a graduate school or college with substantial expansion of graduate enrollment.
- In 2017 UD commissioned a benchmarking study from Hanover Research which interviewed graduate education administrators in order to understand organizational structures for graduate education, explore advantages and disadvantages to centralized and decentralized graduate school operations, and investigate recent trends in graduate program administration.
- In 2017 UD brought in an on-site consultation team from the Council of Graduate Schools. The Strategic Consultation Report stated, "The team strongly and enthusiastically recommends that the University of Delaware establish a Graduate College as part of its academic and administrative structure. ... The leader of the Graduate College should be a dean with a vice provost title. The latter reflects the fact that this individual, unlike the deans of other colleges, looks across the institution to lead graduate and professional education at the University of Delaware. The dean must have a seat at the table with all other deans and should be provided with the authority to leverage resources across the University to promote excellence in all programs, engagement of programs with each other and the community, and the assessment of outcomes. The dean must have the strong, clear and unequivocal support of the provost and the president and be considered first among equals in relation to the other deans."

- March 2019 the Faculty Senate approved the by-laws of the Graduate College. <http://facsen.udel.edu/Sites/Graduate/2019DraftGraduateCollegeBylawsFINALAPPROVEDwithAmendments3-14-19.pdf>
- July 1, 2019, the Graduate College was established.
- October 2019 UD conducted a national search for the first dean of the University of Delaware Graduate College.
- Currently the Office of Research is headed by a Vice President for Research, Scholarship and Innovation, and the University of Delaware Graduate College is headed by the Vice Provost for Graduate and Professional Education/Dean of the Graduate College.

Council of Graduate Schools reports on *The Organization and Administration of Graduate Education*

The Council of Graduate Schools (CGS) is a national organization in the US dedicated solely to the advancement of graduate education and research. NDSU is among the 500 US, Canadian, and other universities that are members. These schools annually award ~87% of all U.S. doctorates and a majority of all U.S. master's degrees. CGS researches and reports on best practice initiatives and provides benchmarking data and services.

A brief from a 2019 publication entitled *The Organization and Administration of Graduate Education*

(<https://cgsnet.org/cgs-research-brief-selected-insights-2019-cgs-survey-organization-administration-graduate-education>) contained the following summary narrative.

“Based on responses from the 200 universities that participated in the 2019 CGS Survey of Organization & Administration of Graduate Education, this brief provides selected insights into how graduate education is organized and administered in the U.S. and Canada. The finding affirms that the majority of responding institutions organizes the responsibilities of graduate education within an organizational unit** led by a dean. This organizational structure provides graduate education administrators with leadership roles that are similar in stature and expectations to those of academic colleges and collegiate deans. We also found that in addition to supporting graduate student success, the organizations responsible for graduate education, particularly at research-intensive institutions, also oversee postdoctoral trainees.”

***The term “graduate schools” is formally or colloquially used to refer to campus organizational units that hold the responsibility for graduate education across different fields of study. Although formal organizational labels vary between institutions (e.g., Graduate School, Graduate College, Office of Graduate Education, Graduate Division, etc.), in this brief, all such units are referred as “graduate schools” regardless of their formal names.*

Key Findings

Overall, more than 64% of institutions responding to the CGS survey indicated that their formal administrative name includes “Graduate School” or “Graduate College,” while 24% reported that their name includes a variation of “Office of Graduate Studies” or “Graduate Division.” The survey affirmed that 48% of graduate education organizations are led by a “Dean” and 27% are led by an “Associate/Vice Provost and Dean”.

- 31% of respondents from master’s colleges and universities and 20% of respondents from R2 and R3 institutions indicated that, in addition to graduate education, graduate schools are also responsible for research administration. None of the R1 graduate schools reported responsibility for research administration as an area of their oversight.

From our analysis of the land grant institutions, the institutions we found with existing combined offices of research and graduate education, and the institutions that divided their combined offices, in addition to reports from CGS and an Ithaca S+R report on “The Senior Research Officer” which provide a broad survey of institutions, it can be stated that:

- At the time of the 2004 publication of *The Organization and Administration of Graduate Education*, it appeared to be more common to see graduate schools and research administration placed together. As research universities grew in size and research output, it became more common for universities to separate the administration of research from graduate education. Now, R1 institutions are not likely to have research administration and graduate education jointly administered; a minority of R2 institutions have research and graduate education jointly administered. University-wide research offices are now the norm. The majority of CGS institutions responding to their survey have graduate deans.
- Rationales for institutions dividing their research administration from graduate education cite institutional growth and a desire to elevate graduate education in their rationales.

Chapter 4. Carnegie Classifications: Key Metrics and NDSU

Summary

Carnegie Classification shows that NDSU has been running across the border between Doctoral Research High and Doctoral Research Very High. We are at a tipping point of these highest Carnegie Classifications, and have moved between rankings in the last two evaluation cycles. This provides an opportunity to identify means by which NDSU can transition into a more sustainable mode of operation in terms of research productivity and PhD student graduates, the two primary measures within the rankings. NDSU has the potential to establish broad, well-supported interdisciplinary programs to build strong, highly fundable teams that work on critically important societal problems.

Carnegie Classification Methods

Our analysis of other institutions reveals the relationship of the organization and administration of graduate education and of university research to have some bearing on the Carnegie Classification of the institution; therefore, we analyzed our placement in the Carnegie ranking.

The Carnegie classifications may be found at

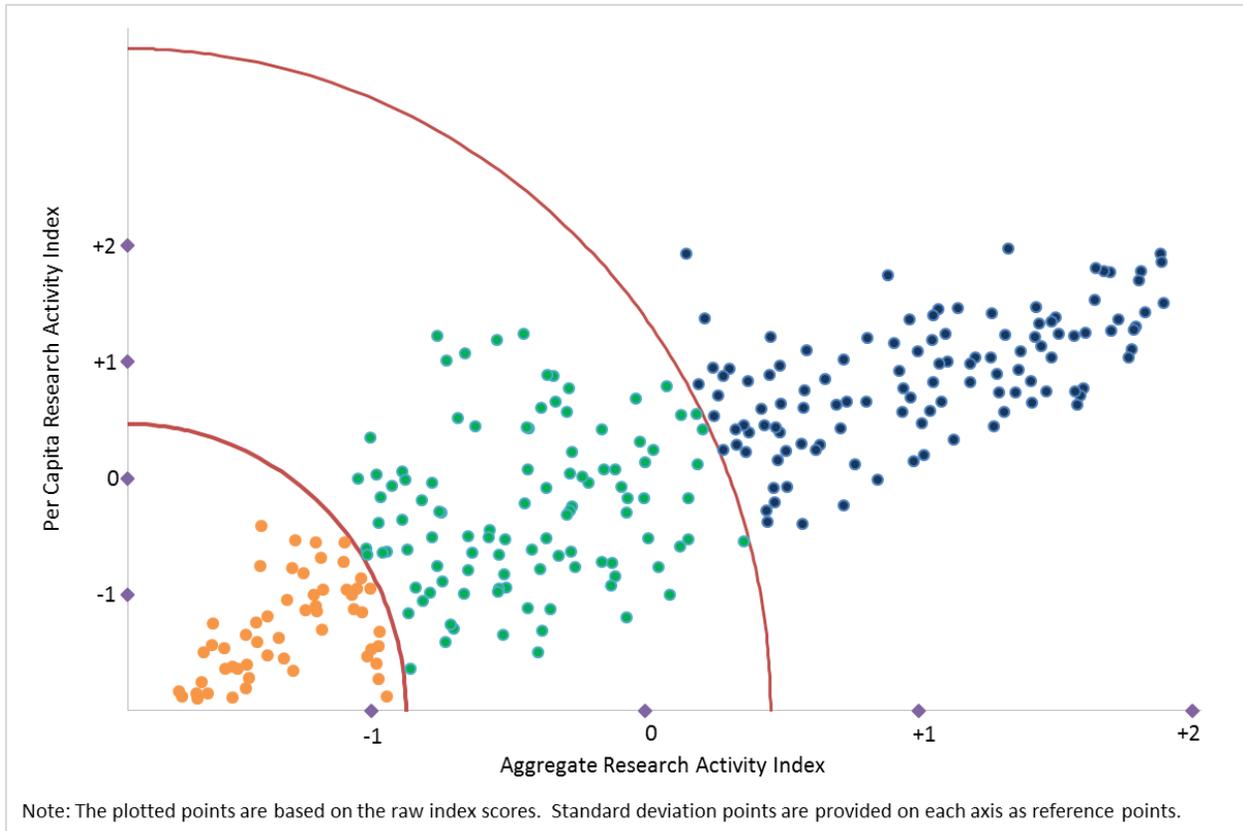
https://carnegieclassifications.iu.edu/classification_descriptions/basic.php

Embedded in this site is an excel file that distinguishes between Doctoral Universities - Very High Research Activity and Doctoral Universities - High Research Activity

http://carnegieclassifications.iu.edu/downloads/CCIHE2018-Research_Activity_Index.xlsx

In the 2019 CGS Brief on the Organization and Administration of Graduate Education, "Roughly 48% of the graduate schools from R1 institutions have responsibility for postdoctoral affairs. While 31% of respondents from master's colleges and universities and 20% of respondents from R2 and R3 institutions indicated that, in addition to graduate education, graduate schools are also responsible for research administration. None of the R1 graduate schools reported responsibility for research administration as an area of their oversight."

Distinguishing characteristics that differentiate these two highest Carnegie ratings is research expenditures (both institution and per capita) and S&E research. This is illustrated below, with a plot of university positions within comprehensive axes rankings related to these two measures, and illustrates grouping of common Carnegie classifications.



Analysis was conducted in 2015 related to why NDSU moved up into Very High Research in 2010, and then back down into the High Research category in 2015, and summarized in a report to Provost Ingram. Between 2010 and 2015, the following institutions moved from higher to highest:

- Boston College
- Clemson University
- Florida International University
- George Mason University
- Kansas State University
- Northeastern University
- Syracuse University
- Temple University
- Texas Tech University
- The University of Texas at Arlington
- The University of Texas at Dallas
- University of Mississippi
- University of North Texas
- University of Wisconsin-Milwaukee
- West Virginia University

The following institutions moved from highest to higher:

- Dartmouth College
- Mississippi State University

- Montana State University
- North Dakota State University-Main Campus
- Rensselaer Polytechnic Institute
- Rockefeller University
- University of Alabama in Huntsville
- Yeshiva University

Each of these institutions is, in some sense, on the bubble for being classified as either higher or highest. So, where does NDSU fit within the rankings, and what is needed to move it consistently higher into the Carnegie rankings?

NDSU and Peer Rankings

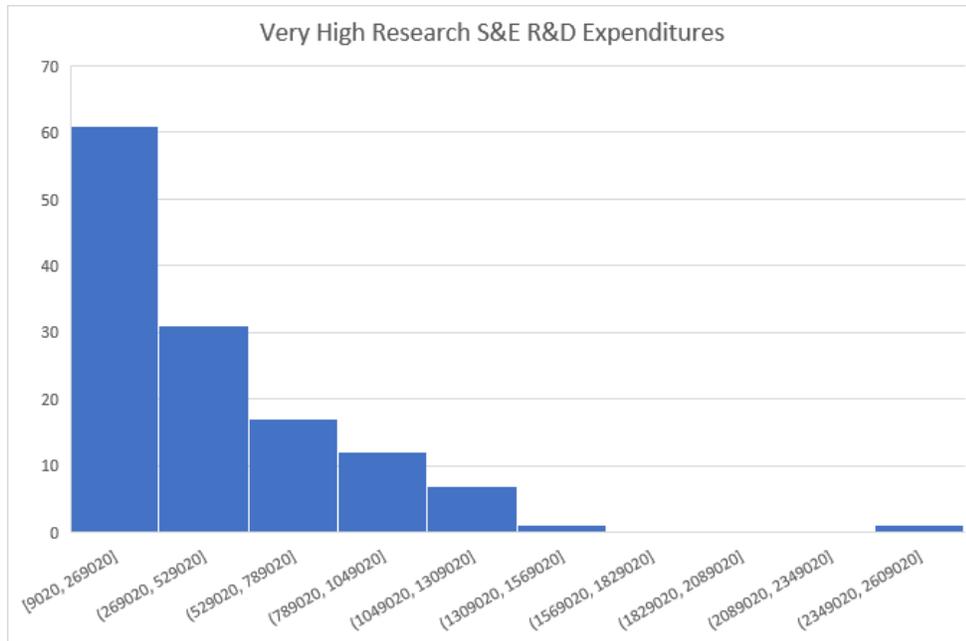
A conclusion of the 2015 report was that NDSU was in the higher of the “High Research” institutions and in the lower end of the index for the “Very High Research” institutions. One relevant sentence from this report is: *Note that an institution can change groupings for two different reasons: activity at that university may change, or activity at other institutions may change.*

What follows is recent NDSU data used in metrics of Carnegie classifications, along with recent NDSU data.

	Doctoral Universities - Very High Activity	Doctoral Universities - High Research Activity	NDSU (2018)
S&E R&D Expenditures (1000s)	423,807	42,930	14,9230
Non-S&E R&D Expenditures (1000s)	26,123	4,612	3,889
S&E Research Staff*	576	38	105
Doctorates: Humanities	45	5	10
Doctorates: Social Sciences	39	7	4
Doctorates: STEM	201	28	60
Doctorates: Other Fields	78	38	20
Per-capita S&E R&D Expenditures (1000s)	278.6	119.4	316.2
Per-capita Non-S&E R&D Expenditures (1000s)	19.7	10.0	8.2
Per-capita S&E Research staff	0.4	0.1	0.22
Number of Faculty Used as Denominator	1,469	504	472

(Source: Research Activity Index Methodology: https://carnegieclassifications.iu.edu/pdf/CCIHE2018_Research_Activity_Index_Method.pdf)

One conclusion is that research expenditures fit within the higher research category. What follows below is a histogram of this data, which shows that NDSU clearly fits within the largest class of institutional research expenditures for the Very High Carnegie classification.



Compared to R1 institutions, graduate schools and their deans at other types of institutions were more likely to have broader areas of responsibilities beyond graduate education. Given the relative sizes of graduate programs, it might make sense that these units oversee other areas; however, they also have relatively fewer FTEs to support their units. It may be the case that graduate education administrators at these universities are asked to do more with less.

NDSU is highly competitive in terms of research expenditures and broad PhD production. For example, NDSU currently ranks 9th among Science and Engineering development funding per graduate enrollment; we need to find ways to get more graduate students to NDSU, which will support Carnegie Ranking.

Grand Challenges and Interdisciplinary Programs

NDSU has adopted a loosely organized structure for interdisciplinary programs, whereby departmental faculty members may collectively participate within interdisciplinary programs of study. The graduate school hosts these programs. This is a real strength at NDSU, as the university has become positioned to offer niche educational programs, and gather researchers

into partnerships that contribute towards building large-scale funded programs that target the interdisciplinary nature of the NAE Grand Challenge, and their four cross-cutting themes: Sustainability, Health, Security, and Joy of Living.

NDSU has the opportunity to further leverage existing interdisciplinary programs to foster teams to address themes within the Grand Challenges:

1. Make Solar Energy Economical
2. Provide Energy from Fusion
3. Develop Carbon Sequestration Methods
4. Manage the Nitrogen Cycle
5. Provide Access to Clean Water
6. Restore and Improve Urban Infrastructure
7. Advance Health Informatics
8. Engineer Better Medicines
9. Reverse-Engineer the Brain
10. Prevent Nuclear Terror
11. Secure Cyberspace
12. Enhance Virtual Reality
13. Advance Personalized Learning
14. Engineer the Tools of Scientific Discovery

Together, the graduate school, with its educational mission, and RCA, with its research funding focus, have components that could be collaboratively shaped to contribute towards greater collective successes. A departmental and institutional reward structure that recognizes and rewards participation within a highly interacting and broadly relevant set of targeted areas of excellence, could foment the seeds of creativity and interdisciplinarity necessary to advance institutional reputation and ranking.

One downside of interdisciplinary programs is that the normal reward system for participation by faculty members is often at odds with the needs of existing disciplinary programs. Where departmental needs exist for teaching courses necessary for undergraduate students and departmental graduate course offerings, conflicts exist for those faculty wishing to also offer courses within the structure of an interdisciplinary program. A potential solution to this problem would be for tuition revenues to flow back to departments from whom instructors reside.

Another, more serious challenge to interdisciplinary programs is that departments are not rewarded for the graduate students that participate within these programs, but whose advisor and funding sources reside within a host department. External ranking entities (e.g., USNews, ASEE, etc.) have established protocols that require a student to be associated with a college/department to be counted in the metrics that establish their rankings. Currently, Power B1 (and formerly, Tableau) do not give departments credit towards the count of students in their department. These counts are critical in establishing departmental ranking, and furthering the goals of achieving highly ranked status for NDSU, as described in the metrics of the Carnegie Classification in this chapter.

Key Findings

It is our strong recommendation that NDSU commit to internal student counting (which impacts resource allocation), whereby students reside within the host department of the advisor and sponsor for those students in interdisciplinary programs. Furthermore, NDSU should adopt a policy whereby these students may also be counted within departments externally towards establishing the metrics to contribute to highly ranked departments. By currently not counting students in interdisciplinary programs within the host department, this detrimentally impacts the ranking and reputation of departments and colleges, and also undermines interdisciplinary program involvement and overall undermines interdisciplinary research.

Chapter 5. Campus Survey: Pros and Cons

The task force prepared a survey comprising eight content questions and one demographic question (*Primary Role at NDSU*). The only required question was a response to Question 2 (*Will the academic and service roles of the NDSU Graduate School and the office of Research and Creative Activity, respectively, be enhanced by combining their administrative functions into a single office?*). The remaining questions and the demographic question were optional.

The NDSU Office of Institutional Research and Analysis provided a list of emails for administrators, faculty, graduate students, and staff to the task force. The list allowed the task force to use an email distribution function in Qualtrics to contact possible recipients and limit participants to one response. Participants were not required to complete responses after first opening the survey; they could return to responses for elaboration. All responses were anonymous. For reference, the survey is available in Appendix A.

The survey period started on 13 October 2020 and closed on 3 November 2020. The survey was delivered to 3775 recipients. The task force encouraged broad participation among the communities at NDSU and even extended the survey period by one week to allow for additional responses. Furthermore, the task force Chair sent several email reminders to encourage participation, and individual task force members encouraged participation at various meetings and informally through discussions. When the survey closed, 181 responses had been submitted (Table 1).

Table 1 – Survey Response Rates

Group	Recipients	Responses	Response Rate
Administrators	36	26	72.22%
Faculty	697	100	14.35%
Graduate Students	846	21	2.48%
Staff	2196	33	1.50%
<i>Unspecified</i>	--	1	--
Total	3775	181	4.79%

Interpretation Method

The task force manually interpreted responses to open-ended questions. We used keywords in context (KWIC) protocol to interpret the responses. The KWIC protocol involved two task force members independently examining responses to one question in order to identify recurring words and phrases then generating a list of keyword themes based on the recurring language. The two task force members compared their lists of themes, discussing agreements and disagreements, and then recorded frequency of responses fitting the themes. Finally, the pair provided the list with response frequency to the remainder of the task force.

We examined the themes of each question to identify larger thematic patterns (motifs) in the survey responses. The motifs helped to have a richer understanding of attitudes toward a possible integration of the two units beyond 'Yes' or 'No' responses. We used these patterns as a reference to contextualize the data and information gathered about other institutions when considering recommendations.

Responses to 'Yes-No' Question Regarding Merger

The first question of the survey was a Yes or No prompt asking respondents about a possible combination of the NDSU School of Graduate and Interdisciplinary Studies (GS) and the Office of Research and Creative Activity (RCA). The majority of respondents (76.2%, 138 responses) did not support a merger of the GS and RCA (Table 2).

Table 2 – Responses: *Will the academic and service roles of the NDSU Graduate School and the office of Research and Creative Activity, respectively, be enhanced by combining their administrative functions into a single office?*

Role	Total	Yes	No
Administrator	26	9	17
Faculty	100	22	78
Graduate Students	21	4	17
Staff	33	7	26

Unspecified	1	1	0
Totals	181	43 (23.8%)	138 (76.2%)

Themes and Motifs Among Responses to Open-Ended Questions

All of the open-ended questions were optional. Question 3 asked for elaboration on the choice to Question 2 (combine the Graduate School and Office of Research and Creative Activity, yes or no). The main motif across questions among the ‘No’ votes was that participants did not see overlap between the two units. Furthermore, the responses contained a concern that, by combining the units, graduate education might lose an important advocate for higher quality graduate programs at North Dakota State University. The main motif across questions among the ‘Yes’ votes was the possibility of synergy between the two units. The responses also felt the integration might reduce costs without elaborating on where the reductions would originate aside from “reduced administration” (presumably, the elimination of the Dean of the GS). Tables 3-8 provide insight into the themes of individual questions.

Table 3 – Themes: *Question 3 Why or why not* [will the roles of the two offices be enhanced by combining]?

Response to Question 2	Theme	Frequency
No [Do not combine]	No Overlap Between Graduate School and Research and Creative Activity	43
	A Merger will Mean the Loss of an Advocate for Graduate Programs and Students	17
	The Office is for Graduate <i>Students</i> not for Research	9

	A Merger will compromise the Integrity of Graduate Education	8
	A Merger will Exacerbate Processes	5
	The Merger is Only Consider in order to Reduce Staff	5
Yes [Combine]	There are Possible Synergies	7
	A Merger will Save Money	4
	The Two Units have Aligned Functions	4

When considering ‘pros’ of combining with regards to the academic role of the Graduate school (Question 5), the themes followed a similar pattern to the themes for Question 3. The ‘No’ responses again emphasized a lack of shared function. Once again, the ‘Yes’ responses note possible cost reduction and improved graduate education (Table 4).

Table 4 – Themes: Question 5 – What are the pros of combining with regards to the academic role of the Graduate School?

Response to Question 2	Themes	Frequency
No [Do not combine]	No shared functions	59
	No shared goals	
	No shared purposes	
	No coinciding roles	

Yes [Combine]	Save money Align with Strategic Plan More integration/coordination Help graduate students learn about the grant process, etc.	79
Neutral		11

Table 5 – Themes: Question 6 -- What are the cons of combining with regards to the academic role of the Graduate School?

Themes	Responses
Graduate student support would decrease	47
Grad school importance/stature diminished at NDSU	24
Units academic/service functions not complementary	21
Increased Grad School or RCA workload without additional support	10
Academic focus of students would diminish	8
Non-research graduate programs diminished in stature	8
Hurt university image	5

Interdisciplinary programs function would diminished	3
Diminish RCA research function	3
Not all grad programs STEM oriented	2
Diminish efficiencies	1
No cost savings	1

Table 6 – Themes: *Question 7 – What are the pros of combining with regards to the service function of the office of Research and Creative Activity?*

Response to Question 3	Themes	Responses
No [Do not combine]	No Pros or No Opinion	56
	Budget Efficiencies	22
	Benefit Graduate Students by Improving Services	13
	Synergies and Better Communication	16
	Reinforce 'No' Vote	7
	Want More Information	3
	Working Through Logic of Merger	7

	Identifying Caveats to Hypothetical Merger	9
	Administrative (Budget) Efficiency	7
Yes [Combine]	Synergies	16
	Student Benefit	7
	No Change	4
	Caveats	4

Table 7 – Themes: Question 8 – What are the cons of combining with regards to the service function of the office of Research and Creative Activity?

Themes	Frequency
Less research focused	41
Dilute services of one or the other	25
Two diverse interests	16
Disruption	14
Do not understand graduate school	10
Conflict of Interest between the two units	5

Added workload for employees	5
Will reduce effectiveness in both units	5
Merger would hurt our R1 ambitions	3
Takes attention away from STEM research	2
Set back progress at RCA	3
RCA is not an academic unit	3
Graduate students not interested in RCA	1
Builds empire of VP of RCA	1
This had failed other places.	1
Should not be done	1
Less student focused	1
Less attention to at least one of the units	1
None," "Not sure," or something similar	16
No response to Question 8	49

The survey closed with an open question for participants to provide additional comments or emphasize points from previous questions. One shared theme was a lack of transparency about the possible integration of the GS and RCA. No proposed plan was available. No proposed

process(es) were outlined. Therefore, a general perception was that a decision had already been made and, therefore, the responses would have no effect. Among the ‘No’ responses, the main theme was the integration had the sole purpose of cutting costs, without considering possible effects on the quality of graduate education or research. The ‘Yes’ responses noted the vote had conditions, such as releasing a plan for further deliberation before integration of GS and RCA (Table 8).

Table 8 – Themes: Question 9 – Is there any other information that you would like to share with the committee?

Response to Question 2	Themes	Frequency
No [Do not combine]	The Only Motivation is to Cut Costs	15
	The Possibility of a Merger is a Bad Idea	10
	My Position is not Determined (“I voted ‘no’ but...”)	8
	Graduate School Advocates for Graduate Education	8
	Thank You to Ad Hoc Committee Members	5
	Merger Benefits all Stakeholders	5
Yes [Combine]	The Merger Should have Explicit Conditions (E.g., plan of new structure and transition documents)	4

Key Findings

Based on the 181 survey responses, the communities on campus generally do not see any substantial overlap in function or purpose between the College of the Graduate and Interdisciplinary Studies and the Office of Research and Creative Activity. Respondents shared

that the purpose of an integration was not articulated, and the lack of transparency was the crux of much skepticism about the possible integration of the two units. Consequently, respondents tended to conjecture that the sole purpose of the merger was to eliminate staff, ostensibly saving money, but at the cost of potentially reducing the quality of graduate education.

Chapter 6. Challenges and Opportunities

After more than a semester of engagement with the questions and materials relating to our charge from the Provost, the committee voted on December 18, 2020, on whether or not to recommend, on the basis of the information we have available at this time (from the administration; NDSU faculty, staff, and graduate students; and our own various types of research) an integration of the current College of Graduate and Interdisciplinary Studies and the Office of Research and Creative Activity. The vote of the committee was: 0 for and 9 against integration of these two units.

Regardless of the path chosen by the NDSU administration from this point on, we think that this multi-month study has pointed us to several useful conclusions. We believe that it would be wise for our university to consider these thoughts in the coming months.

First, although the Graduate Dean and the Vice President for Research and Creative Activity have a good history of communication, we believe that an increased number of broad-ranging contacts and meetings between these two colleagues would be useful in enhancing cooperation between the two entities.

Second, some of the areas where greater collaboration between the entities would be useful would be in professional skills development for graduate students in research integrity, compliance, technology transfer, post-doctoral, career advising, and excellence in writing.

Third, the collaboration point on excellence in writing would be with the NDSU Center for Writers, which is one of the few in the nation with a dedicated service for graduate students, a broadly utilized service to support graduate programs.

Fourth, our interdisciplinary programs are very good, but could be made stronger and used as an effective base for accessing more funding streams, including some which might result in new faculty positions, which in turn would bolster our Carnegie rankings. Increased collaboration and support could be garnered by establishing metrics that provide credit to departments and colleges for faculty engaged in interdisciplinary studies.

Fifth, we believe that the head of graduate studies should continue to report directly to the provost, and that the position should be ranked as vice provost instead of dean. This move would signal the importance of graduate programs and education at NDSU.

Sixth, we recommend that the RCA expand its activities, to the extent possible, in the areas of the humanities, social sciences, and business.

Seventh, survey respondents expressed a need for increased staffing in both units.

Eighth, this report provides information that can be used to leverage other opportunities across NDSU in support of research and graduate programs. NDSU is at the cusp between the two highest Carnegie classifications, and opportunities exist to enhance research and graduate education comprehensively to move NDSU consistently into the highest Carnegie rankings.

Ninth, as a task force, we believe that any decision by the NDSU administration to integrate these two units should seek formal campus representation on how to carry out the integration most fairly and effectively.

Bibliography

Caramello, C. K. DePauw, H. Foley. 2011. "External Review of Graduate Education and Administration at University of Delaware. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

Indiana University Center for Postsecondary Research. (n.d.). The Carnegie Classification of Institutions of Higher Education, 2018 edition, Bloomington, IN.
<https://carnegieclassifications.iu.edu/downloads/CCIHE2018-FactsFigures.pdf>

Council of Graduate Schools. (2004). *Organization and Administration of Graduate Education*. Washington, D.C.: Council of Graduate Schools.

Council of Graduate Schools. (2019). *The Organization and Administration of Graduate Education: A Guide for University Leaders*. Washington, D.C.: Council of Graduate Schools.

Hanover Research. (2017, February). Update--Graduate School Benchmarking Study: Prepared for University of Delaware. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

Hunter, Jeff. (2019, January 24). USU's Research and Graduate Studies Split into Two Offices.
<https://www.usu.edu/today/story/usu-research-and-graduates-studies-split-into-two-offices>

Matson, S. and L. Tedesco. (2017, July 18). The University of Delaware Graduate and Professional Education [Council of Graduate Schools Strategic Consultation Report]. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

Myers, D. J. (2019, April 23). Changes in the Organization of the Office of Graduate Studies and Research [memo]. <https://www.american.edu/provost/communications/april-23-2019.cfm>

National Academy of Engineering, Grand Challenges,
<http://www.engineeringchallenges.org/challenges.aspx>

Okahana, H. and E. Zhou. (2019, November). "Selected Insights from the 2019 CGS Survey of Organization & Administration of Graduate Education."
<https://cgsnet.org/cgs-research-brief-selected-insights-2019-cgs-survey-organization-administration-graduate-education>

Rieger, O. Y., & Schonfeld, R. C. (2020, December 1). The Senior Research Officer: Experience, Role, Organizational Structure, Strategic Directions, and Challenges.
<https://doi.org/10.18665/sr.314490>

Texas A&M University Corpus Christi Division of Research, Commercialization and Outreach. (2013). *Biennial Report*. <https://research.tamucc.edu/assets/file/AR-13.pdf>

UDaily staff. (2008, May 6). "Office of Research and Graduate Studies to be reorganized." *UDaily*. <http://www1.udel.edu/PR/UDaily/2008/may/changes050608.html>

UDaily staff. (2019, October 24). "Search for Graduate College Dean Underway." *UDaily*. <https://www.udel.edu/udaily/2019/october/graduate-college-dean-search-committee/>

University of Delaware. (2011). The Office of Graduate and Professional Education [program review]. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

University of Delaware Academic Organization Group. (2014). "Delaware Will Shine: Models of the New American Research University: Graduate & Interdisciplinary Education." Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

University of Delaware Graduate College. *Graduate White Paper*. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

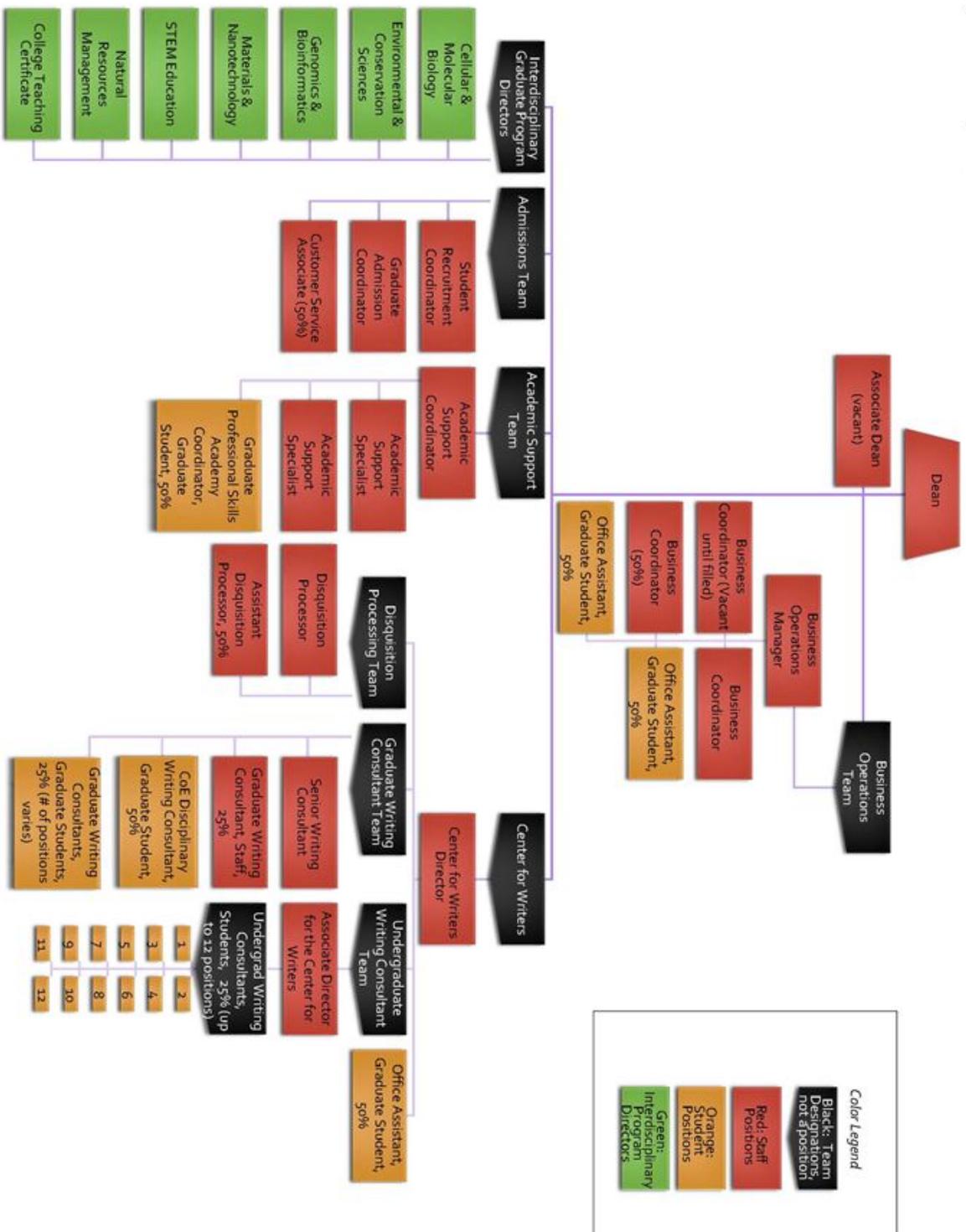
University of Delaware University Graduate Working Group. (2017, September 15). "Organizational Restructuring of Graduate and Professional Education and Planning for Graduate Enrollment Growth" [final report]. Retrieved from <https://grad.udel.edu/grad-white-paper/> on October 22, 2020.

U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). (2018). Enrollment by gender, student level, and full- and part-time status: Fall 2018. Retrieved from <https://nces.ed.gov/ipeds/datacenter/InstitutionList.aspx?goToReportId=6> in December 2020.

Wright, D. (2014, January 24). Emphasis on research, graduate studies at Tennessee Tech results in reorganization. *Tennessee Tech University News*. <https://www.tntech.edu/news/releases/emphasis-on-research-graduate-studies-at-ttu-results-in-reorganization.php>

NDSU College of Graduate and Interdisciplinary Studies

Organization Chart, Fall 2020



Color Legend

- Black: Team Designations, not a position
- Red: Staff Positions
- Orange: Student Positions
- Green: Interdisciplinary Program Directors

