

**State University System
Education and General
2021-2022 Legislative Budget Request
Form I**

University(s):	
Request Title:	Expansion of UNF MEDNexus
Date Request Approved by University Board of Trustees:	8/11/20
Recurring Funds Requested:	3,250,000
Non-Recurring Funds Requested:	2,750,000
Total Funds Requested:	6,000,000
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input checked="" type="checkbox"/>

- I. Description** – 1. Describe the service or program to be provided and how this issue aligns with the goals and objectives of the strategic priorities and the 2020 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program? 2. Describe any projected impact on academic programs, student enrollments, and student services. University of Distinction proposals should also address the requirements outlined in the separate guidance document.

**Phase II FUNDING REQUEST:
*Expansion of UNF MEDNexus***

Overview

The combined assessment of UNF’s academic strengths, NE Florida’s marketplace expertise, and state of Florida workforce needs led to the creation of the UNF MEDNexus. MEDNexus combines academic disciplines with sector expertise to advance key needs in the healthcare sector that include trained professionals, thought leadership, and innovation in medical technology. The focus of MEDNexus is to learn, lead, and innovate through transdisciplinary collaboration, medical and medical-related institutional partnerships, along with digital health and technology developments through UNF’s center for entrepreneurship and innovation. As illustrated in the diagram below, MEDNexus applies a hub-and-spoke approach to healthcare education and

innovation by having UNF serve as the center for bringing together departments, colleges, and healthcare professionals to train students and create scholarship and advance medical practice with the healthcare entities in NE Florida as the outreach partners or spokes in the MEDNexus system.



MEDNexus Concept

Illustrative of the hub-and-spoke approach to healthcare education and outreach is the first diagram which outlines the outreach of UNF’s MEDNexus for the contiguous counties to Duval with the second diagram illustrating outreach possibilities through UNF’s association with Advent Health and the City of Palm Coast in Flagler County.

Background Motivating Program Formulation

Healthcare remains a strategic priority for the state and the board of governors as evidenced in the *Board of Governors 2016 Strategic Plan for Health Initiatives*. Jobs in healthcare are expected to account for 23% of the state’s employment growth between 2016 and 2024 with 200,000 new, high paying healthcare jobs (\$76,000 average salary) added to the economy during this period. Importantly,

filling these jobs with skilled staff is likely to be challenged by adverse demographic trends, specifically, the reduced number of students graduating from high schools in Florida and elsewhere across the country. The Board of Governors emphasis on educating more students for careers in health is therefore well placed. It is especially relevant to NE Florida (Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns counties) where growth in the healthcare sector is likely to be particularly acute and meaningful. The region is known for its healthcare specialization and expertise with such nationally reputed health care providers as AdventHealth, Brooks Rehabilitation Mayo Clinic, MD Anderson, Baptist, Memorial, and St. Vincent/ Ascension all located in this sector the state. Their future need for highly and expertly trained staff is likely to mirror their exponential growth in areas of expertise and competency as well as their exponential growth in facilities, capacity, and areas of healthcare focus.

UNF through the further expansion of the MEDNexus initiative is well positioned to further expand programs to address the current and future needs of NE Florida for excellence in healthcare personnel. The RN to BSN program at UNF, for example, is a top 15 program nationally; health informatics training is widely provided, the school of nursing is recognized as one of six programs nationally for incorporating population health into its curriculum, nursing graduates at UNF consistently have a licensure (NCLEX) pass rate above 95%, and both the UNF Nurse Practitioner and Psychiatric Mental Health Nurse Practitioner programs have 100% certification pass rates. Moreover, UNF has the unique opportunity through its current partnerships with national health care leaders and researchers to not only train the next generation of front-line personnel and administrative leaders in healthcare, but UNF can provide innovative leadership in developing new devices, new processes, and new procedures in medical technology and digital health. These partnerships include partnerships with Florida Blue, Johnson & Johnson, Mayo Clinic, as well as partnerships with startups established through the UNF Center for Entrepreneurship and Innovation which is developing an exclusive focus on establishing startup businesses in healthcare fields.

Process for Building the MEDNexus System

The UNF vision for MEDNexus is to grow the program, its outcomes, and its contributions to become the national leader in training professionals for careers across the multiple facets of healthcare, bringing thought leaders together to solve critical healthcare challenges through scholarship, as well as developing NE Florida as a national hub for healthcare technology through innovation and collaboration. The business plan is to grow MEDNexus in scope and impact through a multiyear, phased approach. The first phase (year 1) involves acquisition of key resources and creation of key partnerships (e.g., City of Palm Coast and Advent Health) for developing a strong foundation of advanced learning in the field of nursing. The main focus is building out the facilities (labs and medical devices) for learning success and building out partnerships in

nursing. The second phase (year 2) involves hiring key faculty for growth in enrollments and for building out additional areas of specialization that include health informatics. The third and fourth phases of the program in subsequent years will focus on adding emphasis to medtech/ digital health initiatives (i.e., the innovation aspect of MEDNexus) as well as launching academic programs in genetic counseling and occupational therapy.

In summary, the development of MEDNexus progresses from a development of the physical infrastructure necessary for success followed by the addition of faculty in key healthcare and healthcare-related disciplines of current UNF expertise to promote enrollment growth with quality. This phase is then followed by key growth in new healthcare programs (e.g., genetic counseling and occupational therapy) and to meet future needs of the industry (e.g., health informatics and analytics) as well as the fostering of innovation to promote the improved practice of healthcare providers and professionals. Integrated throughout the plan is also the critical focus on funding scholarships to make healthcare education affordable and accessible so that UNF and the state of Florida can attract, train, and subsequently retain talented, diverse students and employees who will be the future of healthcare in our state and region.

Funding Plan for MEDNexus

MEDNexus has been proposed by UNF as a \$24M program funded by the state. The Board of Governors approved a \$12M request for year 1 which eventually was funded at \$6M by Governor DeSantis. Therefore, in consideration of current legislative and budgetary conditions, MEDNexus has been necessarily reimagined as now being funded over a four-year period at approximately \$6M per year. As noted, the first phase of MEDNexus has been funded by the state at \$6M for the current fiscal year, 2020-2021. An additional \$2M in funding was also secured from the City of Palm Coast and Advent Health. UNF will continue to seek additional funding from external sources, including federal grants and private partnerships, as the program develops. Our \$6M Legislative Budget Request in 2021-2022 is outlined in more detail below as part of the further overview of the phasing and building of the MEDNexus program.

Multi-Year Plan for Developing the MEDNexus System

A. Phase 1 (Year 1): Funding Received

To reemphasize the initial MEDNexus plan approved by the SUS Board of Governors was in the amount of \$12M. During legislative session the plan was revised and the budget modified to \$6M. The latter legislative budget request was approved as part of the budget signed by Governor Ron DeSantis on June 30, 2020. On July 21, 2020 the Board of Governors approved the initiatives

outlined in the revised MEDNexus budget plan. UNF has immediately moved forward with the following, Board of Governors approved initiatives:

1. Identified space on UNF campus for the nursing simulation (SIM) lab and the nursing skills labs;
2. Identified space on UNF campus for the medical technology innovation lab;
3. Ordered the Maldi mass spectrometer to be housed in the UNF medical technology innovation lab;
4. Met with City of Palm Coast, Advent Health, and other team members to establish critical time lines as well as space and equipment needs for launching an inaugural nursing program in Palm Coast in January 2021; and
5. Created job descriptions necessary for filling the approved MEDNexus leadership positions.

B. Phase 2 (Year 2): Funding Request

UNF's 2021-2022 legislative budget request in the amount of \$6M seeks to fund portions of the MEDNexus deferred due to lack of complete funding in 2019-2020 as well as critical components of MEDNexus needed to fund from a timing perspective in this current fiscal year. The **major focus** of **Phase 1** was **equipment and facilities** (e.g., SIM labs, Maldi mass spectrometer) with an educational emphasis on nursing. The **major focus** of **Phase 2** is **hiring faculty** necessary to expand nursing and other program offerings to increase enrollments and add graduates in areas of high current and future demand by healthcare institutions. This "learning" component (i.e., mission of educating undergraduate and graduate students) of MEDNexus is designed with the goal of providing trained healthcare professionals across the multiple, major areas of healthcare need. Phase 1 focused on nursing programs for the launch of this initiative. Phase 2 will continue the focus on nursing, specifically hiring general and mental health nursing faculty and it will expand the focus of MEDNexus to include faculty hires in physical therapy and health informatics/analytics. These plus other components to the Phase 2 budget request are outlined next:

1. **Nursing Faculty**: in support of nursing education based in Jacksonville and nursing education in Palm Coast, we request six (6) nursing lines in total, four (4) in general nursing and two (2) in mental health nursing (Mental Health DNP);
2. **Health Informatics/Analytics Faculty**: in support of the needs of the NE Florida and the state healthcare community, we seek to expand programs and scholarly expertise in health informatics and analytics. This is an area articulated by health care leaders as a core need and a required competency for future administrative leadership in healthcare. Expanding

programs in health informatics will therefore improve the pipeline in the state for information professionals, clinical personnel with expertise in information technology who can manage the complexities of healthcare more efficiently, as well as leaders who can expertly address IT-related issues (e.g., data acquisition and analysis, systems design, data security and decision processing). Consequently, Phase 2 will focus on adding faculty with health informatic and analytics concentrations. This will include three (3) faculty in the Brooks College of Health, one (1) faculty in the Coggin College of Business (business focus), and one (1) faculty member in the College of Computing, Engineering, and Construction (computer science and methodological focus). These planned hires across disciplines is consistent with the multidisciplinary approach to health education that is unique and a core strength of MEDNexus. These hires will also support existing graduate certificate programs and provide for the development and launch of a new M.S. in Health Informatics degree. Finally, the proposed cluster hire in health informatics/analytics will provide the core faculty for an eventual UNF campus-wide center for data analytics. The analytics center with health informatics as its core competency will further promote the analytical strengths and capabilities of the MEDNexus brand.

3. Physical Therapy Faculty: given that Jacksonville is rated as the second best, large city for physical therapists, and in support of education in physical therapy to address the needs of the state for more highly trained physical therapists, we request the hire of three (3) additional faculty in this discipline;
4. 3D Printing: in further support of existing UNF partnerships (e.g., 3D printing partnership with Johnson & Johnson as well as partnerships with Baptist Health, Brooks Rehabilitation, and the Mayo Clinic) and our growing contributions to medical research and technology, Phase 2 will expand UNF's state-of-the-art printing lab to include the next generation of 3D printers targeted for health-based initiatives; and
5. Scholarships: to attract highly skilled, diverse students, to make college affordable, and to make UNF and the NE Florida region attractive to future healthcare professions from across the country, Phase 2 has a request for scholarship funds. UNF is number one for jobs where students study, obtain degrees, and stay to work in the region at exceedingly high rates.

C. Phase 3 and Phase 4 (Year 3 and Year 4): Future Initiatives

At a very high level, requests in future years will focus on investing in the healthcare innovation aspects of MEDNexus as well as investing in the resources to further grow current programs and add even more academic programs to the MEDNexus and UNF portfolio in critical, emerging areas of healthcare need. Three of these future initiatives are outlined briefly below to provide an indication of reasonable directions for MEDNexus growth with MEDTech a growing area of strategic emphasis likely for Phase 3, and new academic programs in occupational therapy and genetic counseling among possible initiatives for funding in Phase 4 of MEDNexus.

1. Healthcare Innovation: MEDNexus and MEDTech

The purchase of the specialized research and predictive mass spectrometry equipment through the first year funding of MEDNexus (2020-2021); plus the purchase of state-of-the-art 3D printing for health care requested in the current LBR (2021-2022); plus existing institutional competencies in health, analytics, engineering, and computing form the groundwork for the expansion of UNF medical technology (MedTech) as a focus and core aspect of MEDNexus in Phase 3.

Two “Areas of University Distinction” spotlighted in the UNF Strategic Plan approved by the Board of Governors in January 2020 are health and technology. During the development of Phase 3 of MEDNexus, health and technology will be joined to create the UNF MedTech Center, a collaboration between the UNF College of Computing, Engineering & Construction and the Brooks College of Health. MedTech will house cutting-edge research and educational programs where health and technology intersect. Using the COVID crisis as springboard, these programs will include telemedicine, the use of technology to interface with medical devices, and the secure storage and transfer of medical data to distant experts. MedTech will also focus the development of artificial intelligence systems that can assist healthcare providers by affording holistic reviews of patient health records and suggesting initial diagnoses. Other MedTech foci of keen interest to UNF’s constituents are robotics (i.e., the use of robots to operate medical devices) as well as vision training for athletes. In keeping with overarching collaborative theme of MEDNexus and its third pillar of innovation, MedTech will foster collaboration between UNF faculty, students, healthcare providers, and technology companies to develop innovative solutions for the future of healthcare. MEDNexus’ MedTech arm will also partner with and be an integral player in developing the healthcare innovation ecosystem with UNF’s Center for Entrepreneurship and Innovation.

2. Occupational Therapy Program

As a companion to our doctoral program in physical therapy, UNF will explore the development and delivery of a doctoral program in occupational therapy. The two programs would comprise a new Department of Rehabilitation Sciences and would further contribute to the ever-increasing rehabilitation needs in the state of Florida. The median annual salary for occupational therapists in the United States in 2019 was \$84,950 and the employment of occupational therapists is projected to grow 18% from 2018 to 2028, much faster than the average for all occupations (Source: United States Bureau of Labor Statistics).

While both physical therapy and occupational therapy are focused on getting patients back to “normal” after suffering from disease, injury, deformity, or illness, the methods are different and, therefore, the use of one or the other depends upon the specific needs of the patient. Physical therapy employs physical methods such as massage, heat treatment, stretching, and exercise while occupational therapy encourages rehabilitation through the repeated performance of activities required in daily life (e.g., walking, carrying a bag of groceries, self-care activities). Both practices are offered in similar settings, such as inpatient rehabilitation, outpatient rehabilitation, schools, skilled nursing facilities, and home health. Both areas can be positioned as areas of expertise at UNF.

3. Genetic Counseling

We will similarly explore the development of a Master’s in Genetic Counseling graduate program that would seek accreditation by the Accreditation Council for Genetic Counseling (ACGC). Employment of genetic counselors is projected to grow 27 percent by 2028. At present, there is only one genetic counseling program in the SUS (USF). We will collaborate with NE Florida healthcare institutions to best meet their needs in this critical area of modern precision medicine. Genetic counselors excel at the boundaries of several fields including genetics, psychosocial science, clinical diagnostics, and clinical research. UNF’s location in close proximity to the Mayo Clinic, Nemours Children’s, Wolfson Children’s, Baptist, etc., would allow students to have optimal preparation and placement in many areas of genetic counseling such as pediatric genetics, public health genomics, cancer, prenatal genetics, and cardiovascular genetics.

II. Return on Investment - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes.*

UNF MEDNexus and SUS Metrics

The following table captures the projected impact of UNF MEDNexus on relevant SUS metrics across different levels of added student enrollments in the respective healthcare programs. “Current” is the present performance of UNF on the respective metric and “needed for 10 points” refers to ten **excellence points** and not improvement points.

Metric	Current	With Additional Undergraduate Students					Needed for 10 pts
		20	40	60	80	100	
Pct. of bachelor’s grads employed (\$25K+) and/or cont ed 1 yr after grad	70.50%	70.60%	70.80%	71.00%	71.40%	71.70%	72.80%
Median wages of bachelor’s graduates employed full time	\$40,000	\$40,100	\$40,300	\$40,400	\$40,500	40,700*	\$40,700
Net tuition and fees per 120 credit hours	\$10,270	\$10,190	\$10,120	\$10,040	\$9,960	\$9,880	\$9,000
Four-year graduation rate (if additional students are in FT FTIC cohort)	44.60%	45.30%	46.00%	46.70%	47.40%	48.00%	50%
Academic progress rate (if additional students are in FT FTIC cohort)	80.70%	80.90%	81.00%	81.2%*	81.3%*	81.5%*	90%
Bachelor’s degrees awarded in areas of strategic emphasis	57.40%	57.60%	57.90%	58.10%	58.40%	58.60%	50%

Metric	Current	With Additional Graduate Students					Needed for 10 pts
		10	20	30	40	50	
Graduate degrees awarded in areas of strategic emphasis	54.40%	55.0%*	55.6%*	56.1%*	56.6%*	57.2%*	60%

Total performance-based funding points in that column's scenario	83	84	84	85	85	86
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Note: Values noted with an asterisk would generate an increase in performance-based funding points for that metric but note that all increase.

Additional Performance Metrics

At least one metric demonstrating a year-one accomplishment or success for the initial LBR for MEDNexus:

- Metric: Formalize partnerships with City of Palm Coast and regional hospitals
- Metric: Commence building process for nursing simulation center at Palm Coast with partners
- Metric: Commence building process for nursing simulation center at Jacksonville
- Metric: Commence building process for the Medical Technology Laboratory
- Metric: Number of Nursing students admitted at Palm Coast, to start in 2021 (first-year target: 20)

At least one metric demonstrating a year-one accomplishment or success for the second LBR for MedNEX:

- Metric: Development of M.S. in Health Informatics degree program

At least two metrics demonstrating (1) return on investment to the state, (2) improvement over time as a result of the funding, and (3) representing program elevation to excellence and prominence. The following goals represent additional annual amounts over and above current levels, for five years after receipt of funding.

- Metric: Number of B.S. in Nursing graduates per year (UNF + UNF/Palm Coast)
- Metric: Number of Doctor of Nursing Practice (Mental Health) graduates / year
- Metric: Number of Doctor of Physical Therapy graduates / year
- Metric: Number of M.S. in Health Informatics graduates / year

Historic Benchmark (3-Yr Avg)	Historic Benchmark (3-Yr Avg)	Current (AY 2019-20)	3-Year Trend without Investment	3-Year Trend with Investment
BSN students admitted per year at Palm Coast	0	0	0	30
BSN graduates per year (UNF + UNF/Palm Coast)	230	220	230	300
Doctor of Nursing Practice (Mental Health) graduates / year	9	18	18	28
Doctor of Physical Therapy graduates / year	28	30	30	40
Master of Science in Health Informatics graduates / year	0	0	0	10

2021-2022 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II
(to be completed for each issue)

University: University of North Florida
Issue Title: Med Nexus Phase 2

	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	14.00	0.00	14.00
Other (A&P/USPS)	3.00	0.00	3.00
	-----	-----	-----
Total	17.00	0.00	17.00
	=====	=====	=====
Salaries and Benefits	\$2,400,000	\$0	\$2,400,000
Other Personal Services	\$0	\$0	\$0
Expenses	\$400,000	\$1,250,000	\$1,650,000
Operating Capital Outlay	\$0	\$1,500,000	\$1,500,000
Electronic Data Processing	\$0	\$0	\$0
Financial Aid	\$450,000	\$0	\$450,000
Special Category (Specific)	\$0	\$0	\$0
_____	\$0	\$0	\$0
_____	\$0	\$0	\$0
_____	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$3,250,000	\$2,750,000	\$6,000,000
	=====	=====	=====

III. Facilities *(If this issue requires an expansion or construction of a facility, please complete the following table.):*

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.				
2.				

APPENDIX A: Core Competencies UNF Healthcare

Research and Collaboration Accomplishments in Healthcare

In just the past three years, the value of external funding awards made to UNF has increased by 25%, to an annual total exceeding \$10 million. This includes numerous competitive grants from the National Science Foundation, National Institutes of Health, the National Oceanic and Atmospheric Administration, and the US Department of Education, among other federal agencies. The majority of UNF's invention portfolio and tech transfer activity is related to the health sciences, ranging from 3d printing advances to cancer-fighting compounds.

Partnerships with industry and non-profit organizations account for more than 28% of externally funded research, anchored by major collaborative agreements with institutions such as Johnson & Johnson, Florida Blue, and Mayo Clinic, companies interested in UNF both for our R&D capabilities and for our talented graduates.

- *Big Data Advanced Analytics* - Faculty representing all five of UNF's colleges form an active working group focused on "big data" in all of its manifestations, with special strengths in health and education informatics, economic and predictive analytics, and big data architecture and statistics, as well as related fields in cloud computing and cyber-security. With Jacksonville serving as a major hub for medical research and insurance companies, faculty are actively engaging with industry leaders such as Mayo Clinic and Availity who face new data analytics needs and an aging national demographic.
- *Applied Health Research* - Collaborative engagements across UNF's health, engineering, and arts and sciences colleges have created important applied research strengths on topics ranging from obesity and pediatric health to powered mobility and interventions related to balance in geriatric populations. Other research includes the genetic mechanisms of age-related muscle atrophy, the effects of diet and reproduction on life span, and identification and control of mosquito-borne diseases. Significant funding has been provided by the NIH and the Department of Defense, as well as through important partnerships with a community known for its health and biomedical resources.
- The majority of UNF's invention portfolio and tech transfer. Patents are pending on cancer fighting compounds that UNF faculty have synthesized from curcumin, a substance found in the spice turmeric. Tests done in

collaboration with Mayo Clinic researchers show that the compounds inhibit cancer growth while leaving healthy cells unharmed.

- Samples of recent federal support for UNF research include:
 - Data Structure Framework for Chemical Informatics (\$605,849, NSF)
 - Biosynthesis of Economically Valuable Natural Compound (\$294,000, NSF)
 - Designing Adaptive Toys for Disabled Children (\$267,841, NIH)

- Current biomedical research being conducted at UNF
 - Regenerative Biology
 - Aging
 - Nanotechnology and Biomedical Devices
 - Biomedicine
 - Biomechanics
 - Diet and Nutrition
 - Bioinformatics

Accolades for Nursing and Other Programs in Brooks College of Health

- Master's in Nutrition ranked #1 in the country by Guide to Online Schools
- Undergraduate Health Administration ranked #22 in the U.S. 2020 by College Rank.
- The UNF School of Nursing in Brooks College of health was recently ranked No. 2 among the 2020 Best Online RN to BSN Programs in Florida.
- One of six programs under their Curriculum Best Practices for Curriculum Improvement as a model for incorporation of population health into the curriculum.
- The SON graduates have consistently maintained a licensure (NCLEX) pass rate above 90% which is significantly above the average pass rate for Florida and above the average pass rate for the nation. Both the Nurse Practitioner (NP) program and the Psychiatric Mental Health Nurse Practitioner program (PMHNP) program have a 100% certification pass rate.
- The SON has a program completion rate of 96% average over the past three years. The NP program has a 94% and the PMHNP has a 95% completion rate. SON graduates are highly sought out by area hospitals to the point that recruiters come to campus to recruit students prior to graduation. All SON program graduates report a 100% employment rate.

- Doctorate in Clinical Nutrition (DCN) – this program is only the second of its kind in the United States. The first is at Rutgers University.
- Awarded one of the "Best Colleges for Nutrition Degree Programs 2018-19" by schools.com

Health Informatics Initiatives

- UNF currently offers a Health Informatics certificate (Brooks College of Health/College of Construction, Engineering & Computing). Pending approvals of the 2021-22 LBR, UNF will offer a Master degree in Health Informatics.

Physical Therapy & Audiology Distinction

- UNF American sign language/English interpreting program is also the only one in the SUS.

APPENDIX B: Innovation Economy

UNF Center for Entrepreneurship and Innovation

Background:

The Center for Entrepreneurship and Innovation was established to place UNF at the epicenter of new business ventures and creative thinking to the betterment of society and our region. The center is designed to serve as the educational catalyst to promote economic growth and development, attract venture capital, as well as create the next generation of startup-business leaders and business mentors to the benefit of NE Florida and the state. Housed in the former Barnett Bank Building in downtown Jacksonville, the interest, participation, and demand for our services has significantly exceeded all initial expectations.

Mission:

Create and build a thriving ecosystem through university and community partnerships that supports entrepreneurs and helps them pursue and achieve success by connecting innovative ideas with a support structure of talent, expertise, and access to financial resources.