### LINCOLN UNIVERSITY

# FOSTERING UNDERGRADUATE TALENT BY UNLOCKING RESOURCES FOR EDUCATION ACT (FUTURE ACT) COMPREHENSIVE DEVELOPMENT PLAN (2020-2025)



Submitted to the U.S. Department of Education

U.S. Department of Education Attn: Institutional Service 400 Maryland Avenue, SW Washington, DC 20202

**Date Submitted:** 

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#### ABSTRACT: COMPREHENSIVE DEVELOPMENT PLAN (CDP) FUTURE ACT

Lincoln University (L.U.) is ranked number one among all four-year universities in Pennsylvania for student mobility (the percentage of students who come from families in the bottom fifth of incomes and end up in the top fifth of incomes), according to a study published by the Equality of Opportunity Project. Since its founding in 1854, Lincoln University, the nation's first degree-granting Historically Black College and University (HBCU), has been internationally recognized for its commitment to excellence in scholarship and service. Lincoln University graduates have distinguished themselves in many fields, including medicine, science, technology, education, law and the arts. Lincoln University developed a new Strategic Plan, "*Reimagining the Legacy: Learn. Liberate. Lead*" that delineates institutional priorities and goals that will guide decision making and the development and implementation of programmatic initiatives that informed the development of this CDP. For the 2020-2025 grant cycle, there are three (3) primary activities that are related to the <u>Academic Quality Focus Area.</u>

Activity I: Expanding And Advancing Opportunities And Diversity In The Health Professions that focuses on the need to improve the preparation of Registered Nurse (RN) students to increase the licensure (NCLEX) pass rates to meet the Board of Nursing and Accrediting agency requirements.

Additionally, the Program will expand its curricular offerings to continue to broaden diversity in the health professions. This is important, as only about 20% of registered nurses are from a racial or ethnic minority. Men also are a minority in the nursing workforce, representing only 11% of R.N.s, according to recent studies. All national nursing organizations, the Federal Bureau of Health Workforce Hospital Associations, nursing philanthropies, and other stakeholders within the health care community agree that recruitment of underrepresented groups into nursing is a priority for the nursing profession in the U.S. Through this activity, efforts will focus on the implementation of effective strategies for online learning and the development of a Health Management major.

Activity II: Strengthening STEM Majors Through The Provision Of Supplemental Resources will not only provide technology and other resources to undergird faculty's ability to prepare students in STEM areas but also to recruit and maintain a strong STEM faculty. The major outcomes of this activity will be to 1) strengthen interdisciplinary collaborative scholarship, 2) increase faculty research initiatives, and 3) increase curriculum development initiatives allowing Lincoln to continue to provide a rich educational experience for our students, thereby making them more competitive for work or graduate school. Implementing this activity will yield improved learning through high impact practices in active learning spaces.

Activity III: Strengthening The William K. Dadson Entrepreneurship Center (WDEC) activity will provide the resources to engage in curricular review and faculty re-tooling to ensure that the courses, co-curricular activities and instructional modalities are preparing students to be productive contributors to this ever-changing world that relies on innovation and new technologies. Through the Innovation Center, students will engage in activities that will prepare them to be creative, critical thinkers, entrepreneurs and innovators. External experts will be identified to engage faculty and students in increasing their repertoire of knowledge and their ability to produce innovative products. Also, state-of-the-art technologies will be provided for use by faculty and students to conduct research and to implement projects. The infusion of new courses and programs will be a direct result of the activity.

#### LINCOLN UNIVERSITY

### FOSTERING UNDERGRADUATE TALENT BY UNLOCKING RESOURCES FOR EDUCATION ACT

#### **COMPREHENSIVE DEVELOPMENT PLAN (CDP)**

#### 2020-2025 GRANT CYCLE

#### **INTRODUCTION/INSTITUTIONAL OVERVIEW**

Since its founding in 1854, Lincoln University, the nation's first degree-granting Historically Black College and University (HBCU), has been internationally recognized for its commitment to excellence in scholarship and service. Lincoln University graduates have distinguished themselves in many fields, including medicine, science, technology, education, law and the arts. In addition to our more well-known graduates — U.S. Supreme Court Justice Thurgood Marshall '30; poet and playwright Langston Hughes '29; the first president of Nigeria, Nnamdi Azikiwe '30; and the first president of Ghana, Kwame Nkrumah '39 — Lincoln University and its graduates have participated in the founding of eight U.S. universities and launched the model for what became the U.S. Peace Corps. Lincoln graduates also include the first African American bishop of the United Methodist Church, Roy C. Nichols '41, and the U.S. Navy's first African American female rear admiral, Lillian Fishburne '71. In 1884, the University also produced the first alumni magazine published by any college or university in the United States.

Lincoln University's beginnings can be traced back to its founder, Presbyterian Minister John Miller Dickey; his wife, Sarah Emlen Cresson; and its first two students, brothers James Ralston and Thomas H. Amos. The University was initially chartered as Ashmun Institute in honor of Jehudi Ashmun, the first governor of Liberia, and renamed Lincoln University in 1866 after the assassination of President Abraham Lincoln. Since its inception, Lincoln has attracted an interracial and international enrollment from the surrounding community, the region and throughout the world. The University admitted women students in 1952 and formally associated with the Commonwealth of Pennsylvania in 1972 as a state-related, coeducational university. The Middle States Commission on Higher Education is the regional accrediting association that accredits Lincoln University of Pennsylvania.

#### UNIVERSITY STATISTICS (2014-2019)

Lincoln University has placed an institutional emphasis on the retention of its student clientele. A strong collaboration was forged between Academic Affairs and Student Affairs to provide services to students ranging from academic intervention services to external internship opportunities. The University has invested heavily in offering professional development opportunities to both faculty and staff to ensure that they have current knowledge in their areas and understand the educational and social needs of the students matriculating at the University.

#### Enrollment Data

Like many HBCUs, Lincoln has experienced a decrease in enrollment due to the economy. Given the decline in enrollment, strategies have been implemented to strengthen the persistence of our current students. Since the University does not have a formal summer session, students are free in the summer to engage in individual projects to enhance their pursuits. The University prides itself on providing an intellectual environment that meets the individual needs of students and promotes academic success. The opportunities, challenges, and support available within the infrastructure of the University are paramount in addressing the needs of students to become confident leaders through intensive campus services that nurture and encourage student success. University enrollment data for this report covers 2014- 2019. Data were compiled based on full-time and part-time undergraduates matriculating at the time of the Fall census.

#### **Enrollment by Classification**

*Table I* documents the degree-seeking enrollment by classification for the 2015-2019 academic years.

TABLE I: ENROLLMENT BY CLASSIFICATION						
Academic Year	Freshmen	2ndYear	Sophomores	Juniors	Seniors	Total
2015-16	523	142	333	385	304	1,687
2016-17	662	190	365	301	298	1,816
2017-18	791	178	419	355	251	1,994

2018-19	620	183	628	408	274	2,113
2019-20	498	218	469	519	328	2,032

### Non-Resident Alien Population

*Table II* represents a disaggregation of the University's non-resident alien population by country:

TABLE II: NON-RES	TABLE II: NON-RESIDENT ALIEN POPULATION (2019FA)					
Country of Origin	Number of students	Percentage of Student Population				
ANGUILLA	4	7.02%				
BAHAMAS	2	3.51%				
CANADA	1	1.75%				
ETHIOPIA	2	3.51%				
GHANA	1	1.75%				
NEW ZEALAND	1	1.75%				
NIGER	5	8.77%				
NIGERIA	39	68.42%				
SAINT LUCIA	1	1.75%				
ZAMBIA	1	1.75%				
Grand Total	57	100.00%				

### Racial Composition

The University's ethnic/racial composition is a testament to its multiculturalism. *Table III* documents the ethnic and racial makeup during the 2019-2020 academic year:

TABLE III: ETHNIC RACIAL COMPOSITION AS OF FALL 2019					
Ethnic/Racial Composition	Number of Students	Percentage of Student Population			

American Indian or Alaska Native	3	0.15%
Asian	1	0.05%
Black or African American	1,727	84.99%
TABLE III: ETHNIC RACIAL CO	MPOSITION AS OF FAL	L 2019 (cont'd)
Ethnic/Racial Composition	Number of Students	Percentage of Student Population
Hispanic/Latino	94	4.63%
Non-resident alien	57	2.81%
Race and ethnicity unknown	72	3.54%
Two or more race	64	3.15%
White	14	0.69%
Grand Total	2032	100.00%

### <u>Current Phase I Data</u>

*Table IV* details the Phase I Data submitted by Lincoln University to the U.S. Department of Education documenting Lincoln's graduation rate and students enrolled in graduate and professional school in a degree program in which Blacks are underrepresented:

TABLE IV: MOST RECENT PHASE I DATA						
Year Of Graduation From Undergraduate School	Total Number Of Graduates In The Undergraduate Class (Associate Or Baccalaureate Degree)	Students Admitted To And In Attendance At A Graduate Or P Professional School In A Degree Program In Disciplines In Which Blacks Are Underrepresented				
(A)	<b>(B</b> )	( <b>C</b> )				
Year 1 - 2015	252	104				
Year 2 - 2016	264	111				
Year 3 - 2017	257	73				

Year 4 - 2018	233	51
Year 5 -2019	308	23
TOTALS	1,314	362

### **RETENTION**

Retention is always a challenge in institutions of higher learning. Students drop out or stop-out for various reasons. Lincoln views retention as a commitment that must be addressed university-wide. Retention strategies are continually implemented and enhanced through collaboration among all units at the University that serve students during their matriculation. Committees have been appointed to address the retention effort.

			TABLE V	: RETEN	<b>FION DA</b>	TA			
Legend: G- Graduated C- Continued			Retention Rate		Less Than Four Years		r Four ears	After Yea	
Entering Fall	Head Count		After Two Years	After Three Years	G	G	С	G	С
2010	382	72.3%	57.9%	54.7%	0.5%	24.6%	22.8%	38.7%	3.4%
2011	305	66.9%	59.0%	54.4%	0.7%	28.5%	18.7%	42.6%	2.0%
2012	447	71.4%	61.1%	58.4%	0.4%	27.1%	20.4%	42.1%	2.0%
2013	331	75.8%	66.2%	59.8%	0.9%	29.3%	20.5%	41.1%	2.1%
2014	301	77.4%	61.1%	53.8%	0.0%	26.6%	16.6%	41.5%	4.0%
2015	453	72.6%	62.5%	54.5%	0.7%	32.2%	20.8%		
2016	517	68.1%	57.8%	51.3%	0.2%				
2017	660	78.3%	65.2%						
2018	536	71.3%							
2019	443								
Overall Average	480	70.2%	56.5%	50.1%	0.6%	24.4%	18.7%	37.7%	3.1%

### ACADEMIC PROGRAMS

The institution offers the following academic programs:

- Accounting (B.S., B.A., minor)
- Anthropology (B.S., B.A., minor)
- BHS-FLEX (B.S., B.A.)

- Biochemistry and Molecular Bio (B.S., B.A.)
- Biology (B.S., B.A., minor)
- Black Studies (minor only)
- Chemistry (B.S., B.A.)
- Computer Science (B.S., B.A., minor)
- Criminal Justice (B.S., B.A., minor)
- Economics (minor only)
- Engineering Science (B.S.)
- English Liberal Arts (B.A., minor)
- Entrepreneurial Studies (minor only)
- Environmental Science (B.S., B.A., minor)
- Ethics (minor only)
- Finance (B.S., B.A., minor)
- Foreign Languages (B.A., minors)
- Health Science (B.S., B.A.)
- History (B.S., B.A., minor)
- Human Services (B.S., B.A., minor)
- Information Technology (B.S., B.A., minor)
- International Relations (minor only)
- Management (B.S., B.A., minor)
- Mass Communications (B.S., B.A., minor)
- Mathematics (B.S., B.A., minor)
- Museum Studies (minor only)
- Music (B.A., minor)
- Nursing (Pre-licensure BSN)
- Pan-Africana Studies (B.S., B.A.)
- Philosophy (B.S., B.A., minor)
- Physics (B.S., B.A., minor)
- Political Science (B.S., B.A., minor)
- Pre-Law (certificate only)
- Psychology (B.S., B.A., minor)
- Religion (B.S., B.A., minor)
- Sociology (B.S., B.A., minor)
- Visual Arts (B.S., B.A., minor)

### <u>High Enrollment Majors</u>

The number and percentage of the student body enrolled in high enrollment majors follow in *Table VI*:

### TABLE VI: ENROLLMENT IN MOST POPULAR MAJORS

Note: Data are based on undergraduate, matriculating, full-time and part-time students enrolled at the Fall census.

Fall 2015		
Declared Majors Only (1st & 2nd Majors)	N	%
Human Services	206	12.21%
Health Science	112	6.64%
TABLE V: ENROLLMENT IN MOST PO	OPULAR MAJOR	RS (cont'd)
Note: Data are based on undergraduate, matriculating, fu	all-time and part-time	me students enrolled
at the Fall census.		
Fall 2015 (cont'o	d)	
Management	81	4.80%
Declared (1st & 2nd Majors) and Intended Majors	Ν	%
Human Services	215	12.74%
Management	168	9.96%
Health Science	140	8.30%
Fall 2016		
Declared Majors Only (1st & 2nd Majors)	Ν	%
Human Services	212	11.67%
Health Science	107	5.89%
Digital Communication and Media/Multimedia	87	4.79%
Declared (1st & 2nd Majors) and Intended Majors	N	%
Human Services	220	12.11%
Management	175	9.63%
Nursing	174	9.58%
Fall 2017		
Declared Majors Only (1st & 2nd Majors)	Ν	%
Human Services	194	9.73%
Digital Communication and Media/Multimedia	99	4.96%
Management	97	4.86%
Declared (1st & 2nd Majors) and Intended Majors	N	%
Nursing	210	10.53%

Human Services	205	10.28%	
Management	188	9.43%	
Fall 2018 (cont'd	d)		
Human Services	198	9.37%	
Digital Communication and Media/Multimedia	128	6.06%	
Criminal Justice	122	5.77%	
Declared (1st & 2nd Majors) and Intended Majors	Ν	%	
Fall 2019			
Declared Majors Only (1st & 2nd Majors)	N	%	
		0.0.00	
Human Services	184	9.06%	
Human Services Criminal Justice	184 140	9.06% 6.89%	
Criminal Justice	140	6.89%	
Criminal Justice Health Science	140 134	6.89% 6.59%	
Criminal Justice Health Science Declared (1st & 2nd Majors) and Intended Majors	140 134 N	6.89% 6.59% %	

### **Popularity Of Majors Strengthened Through Title III Funding**

Academic Quality has been the Title III Focus Area that has been the basis for the majority of Lincoln's funding requests. Faculty and students acknowledge that these supplemental funds assist in strengthening the curriculum, offer opportunities for faculty development and provide additional instructional resources, including technology, to enhance student learning. Following are the two (2) academic programs that were most impacted by Title III funding:

### TABLE VII: RANK IN POPULARITY OF TITLE III FUNDED PROGRAMS

Note: All data is based on undergraduate, matriculating, full-time and part-time students enrolled at the

Fall census.

Fall 2015					
Declared Majors Only (1st & 2nd Majors)	N	%	Rank in popularity		
Computer Science	46	2.73%	7th		
Nursing	30	1.78%	10th		
Declared (1st & 2nd Majors) and Intended Majors	Ν	%	Rank in popularity		
Nursing	118	6.99%	7th		
Computer Science	68	4.03%	10th		
Fall	2016				
Declared Majors Only (1st & 2nd Majors)	N	%	Rank in popularity		
Nursing	45	2.48%	7th		
Computer Science	40	2.20%	8th		
Declared (1st & 2nd Majors) and Intended Majors	Ν	%	Rank in popularity		
Nursing	174	9.58%	4th		
Computer Science	65	3.58%	10th		
Fall	2017				
Declared Majors Only (1st & 2nd Majors)	Ν	%	Rank in popularity		
Nursing	51	2.56%	8th		
Computer Science	45	2.26%	9 <sup>th</sup>		
Declared (1st & 2nd Majors) and Intended Majors	N	%	Rank in popularity		
Nursing	210	10.53%	1st		
			ROGRAMS (cont'd)		

the Fall census.			
Fall 201	7 (cont'd	l)	
Declared (1st & 2nd Majors) and Intended Majors	N	%	Rank in popularity
Computer Science	90	4.51%	10th
Fall	2018		
Declared Majors Only (1st & 2nd Majors)	Ν	%	Rank in popularity
Computer Science	49	2.32%	8th
Nursing	47	2.22%	9th
Declared (1st & 2nd Majors) and Intended Majors	N	%	Rank in popularity
Nursing	253	11.97%	1st
Computer Science	92	4.35%	10th
Fall	2019		
Declared Majors Only (1st & 2nd Majors)	Ν	%	Rank in popularity
Computer Science	51	2.51%	8th
Nursing	37	1.82%	10th
Declared (1st & 2nd Majors) and Intended Majors	N	%	Rank in popularity
Nursing	198	9.74%	2nd
Computer Science	86	4.23%	10th

### ACCREDITATIONS

The Middle States Commission in Higher Education accredits Lincoln University. The institution has been a member since 1922 and its last reaffirmation visit was in 2019. The next Self-Study Evaluation is scheduled for 2026-2027. Lincoln's Mid-Point Peer Review will take place in 2023. The University holds three (3) specialized academic accreditations:

Chemistry	American Chemical Society
Education	The Pennsylvania Department of Education
Baccalaureate Degree in Nursing	Commission on Collegiate Nursing Education

#### SUMMARY OF THE INSTITUTION'S PLANNING PROCESS

Lincoln University, under the leadership of President Brenda A, Allen, developed a new Strategic Plan, *"Reimagining the Legacy: Learn. Liberate. Lead."* that delineates institutional priorities and goals that will guide decision making and the development and implementation of programmatic initiatives. In September 2017, President Allen appointed a broadly representative Strategic Planning Council, that included faculty, staff, students, alumni and trustees to:

- Advise the president on the development, coordination, integration and evaluation of the strategic plan;
- > Study and interpret data relevant to the institution and the external environment; and
- Assist in engaging the entire institutional community as fully as possible in the planning process and in communicating with key stakeholders.

Three (3) task forces were established to assist with key components of the planning process:

- The Situation Analysis Task Force collected and interpreted data to understand better the planning context and identify strategic issues;
- The Stakeholders Conference Task Force assisted in planning a large group event designed to engage the University's major stakeholders in the planning process; and
- The Outcomes and Measures Task Force developed outcome statements and suggested ways to measure progress toward achieving the mission and vision.

### **Data Collection and Interpretation**

Because Lincoln University had completed a planning exercise in 2015 under Interim President Richard Green, this strategic planning process was designed to build on the information and insights gained from that planning exercise and other past efforts. Key concepts identified from previous surveys, internal documents, prior strategic plans and initial interviews with key staff members related to the University's mission, vision and goals were used as a starting point for engaging the campus community in the planning process. A brief online survey was administered to faculty, staff, students, alumni and trustees to test whether the key concepts identified from the preliminary data-gathering process resonated with the University's stakeholders. Concurrent with the online survey, the Situation Analysis Task Force collected and reviewed existing internal and external data to identify strategic challenges and opportunities. Also, student leaders, faculty, and staff were interviewed to develop a comprehensive understanding of Lincoln today and the perspective of stakeholders about its future..

#### **Stakeholders Conference**

After the task forces submitted reports to the Strategic Planning Council, the information was used to develop the draft mission, vision, strategic themes and strategic results (outcomes and measures.) The Stakeholders Conference Task Force then helped to plan and facilitate a Stakeholders Conference, which was held on November 17, 2017, in the Student Union Building on the Lincoln University campus. The conference engaged nearly 200 major stakeholders, including students, faculty, staff, alumni, government officials, community and business leaders, and trustees. They discussed the University's proposed mission, vision, strategic themes and strategic results. The feedback from this session was used to refine the concepts further and develop the first draft of the plan.

#### The Planning Context (Small College Survival)

While most institutions of higher education are grappling with the impact of shifting demographics, rising costs and reduced state and federal support on their operations, this climate makes small colleges especially vulnerable. Additional characteristics of the University, including its being a semi-private, liberal arts and historically Black institution, provide further stressors. In such an environment, the historical funding model adopted by many small, private, and semi-private liberal arts institutions is particularly challenged.

#### LINCOLN UNIVERSITY'S STRATEGIC OPPORTUNITIES

#### **Finances and Enrollment**

As evidenced by five consecutive years of balanced budgets and unqualified opinions on its annual audits, Lincoln University is financially stable. Additionally, the University's asset base—comprised of land, facilities and investments—is relatively large compared to institutions of the same size and character. Further, the University has experienced such steady growth in enrollments that the current student population is the largest in the institution's history. As a result, the University is now poised to move from being fiscally stable to fiscally healthy. Achieving this goal will require a concerted effort towards identifying new and diverse streams of revenue while balancing enrollment growth with educational resources.

#### Curricular and Co-Curricular

Surveys, interviews and focus groups confirm that Lincoln University should continue to emphasize its tradition of the liberal arts. Faculty and alumni are especially supportive of this direction. The current curricular and co-curricular opportunities suggest that the University has maintained a liberal arts base. The Institutional Learning Outcomes identified represent many of the essential skills deemed important within the higher education and corporate communities. Many of our students have access to high impact pedagogies, such as study abroad, undergraduate research and internships, which are known to impact learning profoundly. The goal now is to maximize the University's approach. Particular focus must be placed on embedding opportunities to develop and hone essential skills across curricular and co-curricular experiences. Additionally, better integration of high-impact learning opportunities into the overall educational context deserves strategic attention.

#### Technology, Internal Processes and Organizational Structures

Lincoln University managed to move forward over the past five years despite turbulent financial and leadership challenges. Austere budgeting practices and reductions in force allowed the University to operate uninterrupted. Faculty and staff came together to ensure the delivery of services to students, and best practices such as outsourcing were used to manage daily demands. Through these efforts, the University has maintained effective operations. The University must now prepare itself for long-term growth. This growth will require investments in technological and physical infrastructures. Strategic increases in faculty and staff will be needed to balance the workforce better, and we must seek the functional synergies in our organizational structure that are necessary to deliver the highest quality of service to our students.

#### **OVERVIEW OF CURRENT LONG-RANGE PLAN**

Over the next five years, Lincoln University will produce greater value for students, alumni, faculty, and staff by increasing our attention to factors associated with student retention and graduation, becoming more intentional about connecting students to career options early in the college experience, enhancing the expertise of faculty in teaching and scholarship, and increasing opportunities for professional development. Our attention to these aims will increase our effectiveness as a postsecondary educational institution and raise the reputation of the University.

#### <u>Mission</u>

Lincoln University, the nation's first degree-granting Historically Black College and University (HBCU), educates and empowers students to lead their communities and change the world. It does so by:

- > Providing a rigorous liberal arts education featuring active and collaborative learning;
- Integrating academic and co-curricular programs with the University's distinctive legacy of engagement, social responsibility and leadership development; and,
- Cultivating the character, values, and standards of excellence needed to enable students to become responsible citizens of a global community.

#### **Vision**

Lincoln University will be a national model for both 21st-century liberal arts undergraduate education and innovative graduate and professional programs. From its beginnings, Lincoln University has placed great emphasis on a liberal arts education, one dedicated to students acquiring the knowledge and skills needed for success. But learning at Lincoln has not just been about mastering facts and figures. Instead, a Lincoln education stresses the acquisition of knowledge to develop free, independent and creative thinkers. Further, the educational goals have always favored the use of knowledge and intellectual skills toward leading change in the nation and beyond. This legacy represents the strength upon which the University can continue to build, especially since the educational process at Lincoln speaks well to contemporary calls for college graduates to be able to thrive in a rapidly changing world.

#### THEMES AND STRATEGIC OBJECTIVES:

"Reimagining the Legacy: Learn. Liberate. Lead." is designed to advance this glorious history in the context of the 21st century. Particular attention will be paid to teaching innovations and more deliberate efforts to develop and hone important intellectual and interpersonal skills.

Toward these ends, the plan has two broad aims: (1) to operationalize the University's distinctive education model and (2) to identify the processes, policies and resources needed to realize the educational goals. There are five (5) supporting themes identified as vehicles to address the priorities and accomplish the strategic objectives of Lincoln University's strategic plan:

THEME 1.0:		
<b>BUILD A CULTURE THAT SUPPORTS STUDENT SUCCESS</b>		
EFFECTS	STRATEGIC OBJECTIVES	
1.1	1.1.1	
Student success at Lincoln University is	Use an inclusive process, develop a values	
defined as supporting students to perform	statement for the University that describes values	
well academically; develop holistically	in behavioral terms.	
(mind, body, and spirit); and successfully	1.1.2	
advance to graduate school, service or	Connect culture and accountability by defining	
employment. Graduates will leave Lincoln	expectations for both performance and value-	
University with the knowledge, attitudes	driven behaviors for everyone associated with the	
and competencies needed to be competitive	University — including vendors and partners —	
in a global economy and to have a positive	and holding everyone accountable, every day.	
impact on their families, their communities,	1.1.3	
the nation, and the world. HBCUs have a	Design and deliver or procure training and	
track record of demonstrating that students	professional development programs that support	
from all backgrounds can achieve at high	employees in developing skills which reflect	
levels. Lincoln University will continue its	institutional values and behavior (e.g. customer	
tradition of accepting students of promise	service, communication and collaboration, team	
and empowering them to achieve their full	building).	
potential. High academic and social	1.1.4	
standards, along with outstanding student	Design reward and recognition programs to	
support, produce student success.	bring favorable attention to faculty, staff,	
	students and administrators whose behavior and	
	performance support student success.	

THEME 2.0: ENHANCE ACADEMIC QUALITY AND ACHIEVE OPERATIONAL EXCELLENCE		
EFFECTS	STRATEGIC OBJECTIVES	
2.1	2.1.1	
Lincoln University builds upon a glorious	Develop a strategic enrollment management plan	
past and advances the legacy to "educate for	that incorporates both recruitment and retention	
freedom" as envisioned by Horace Mann	goals, clarifies the target undergraduate and	
Bond, the University's eighth president, in a	graduate populations, and identifies the optimal	
way that works for the 21st century. The	enrollment size to achieve the University's	
University's academic and co-curricular	academic and financial goals.	
programs and services are exceptionally		
well suited for the students it serves. By	2.1.2	
focusing on a liberal arts approach featuring	Develop a plan for the School of Adult &	
high impact practices, investing in areas of	Continuing Education in Philadelphia that	
strength in the sciences, and investing in	integrates the University's strategic and	
faculty growth and development, Lincoln	enrollment goals.	
University graduates students who	2.1.3	
continuously build our reputation.	Review curricula and syllabi to ensure that	
Moreover, Lincoln's business processes are	general education and major program courses are	
characterized by operational excellence.	tied to institutional learning outcomes and include	
The administrative systems, policies,	high impact pedagogies.	
procedures and communication channels	2.1.4	
work effectively to achieve the mission and	Review. and revise, as necessary, academic	
vision.	personnel policies to ensure that faculty hiring,	
	orientation, and tenure and promotion practices	
	support institutional priorities.	
	2.1.5	
	Invest in faculty development and research	
	opportunities.	

2.1.6
Continue to enhance faculty governance and
develop leadership potential within the faculty
and academic administration.
2.1.7
Review and revise the performance management
system to ensure that employees receive
effective and timely feedback on performance.
2.1.8
Identify operational issues that most hinder
progress in achieving the vision and work
collaboratively to resolve these issues using task
forces, process redesign, administrative action,
policy change or other tactics.

THEME 3.0: DEVELOP STRATEGIC PARTNERSHIPS TO LEVERAGE RESOURCES AND		
ASSETS		
EFFECTS	STRATEGIC OBJECTIVES	
3.1	3.1.1	
Through a myriad of strategic partnerships,	Identify expertise (internally or externally) in	
Lincoln works with local, regional, national	designing and implementing public-private	
international partners to develop property,	partnerships and develop a plan for growth.	
conduct research, solve community		
problems and contribute to the cultural life	3.1.2	
of the community. The University's focus	Develop an institutional structure and process for	
on active and collaborative learning using	identifying and evaluating potential partnerships,	
high impact practices is supported by	sponsorship and engagement opportunities.	
developing partnerships with industry,		
entrepreneurs, schools, governments and	3.1.3	

the non-profit sector. The goal: to create	Identify three or more partners to enhance
opportunities for students to apply what	professional school options for Lincoln
they are learning in the classroom while	University students.
experiencing the world. Strategic	
partnerships like public-private partnerships	
are helping the University diversify its	
revenue streams while also providing both	
educational opportunities for students and	
products or services for the University and	
the local community. Strategic internal	
partnerships between divisions and	
departments, faculty and staff ease the flow	
of communication within the University and	
support a work environment that is	
collaborative, efficient and effective.	

### **THEME 4.0:**

## STRATEGICALLY ALIGN RESOURCES TO SUPPORT INSTITUTIONAL PRIORITIES

EFFECTS	STRATEGIC OBJECTIVES
4.1	4.1.1
Lincoln University aligns resources with its	Review and revise the organizational structure to
highest priorities. Strategic spending	facilitate communication, collaboration and
ensures that every dollar spent supports	accountability within and among units.
student success. Organizational structure,	4.1.2
policies, procedures and decision-making	Diversify revenue sources through entrepreneurial
processes converge to allocate people,	activity, fundraising and philanthropic support.
money and infrastructure toward projects	4.1.3

and initiatives that support the vision. The<br/>University is a model of stewardship.IUniversity is a model of stewardship.ILincoln is prudent in its use of every dollar<br/>and opportunity provided by the state,<br/>alumni, friends and partners. New and<br/>reallocated resources support initiatives that<br/>enhance the educational experiences of all<br/>students. Lincoln constantly identifies<br/>business opportunities that generate new<br/>dollars for investment.I

Design and implement a process that integrates planning, budgeting and assessment.

### 4.1.4

Enhance the institutional research function and provide professional development to support faculty, staff, students and administrators in using data to inform decisions.

#### 4.1.5

Complete a Campus Master Plan that aligns priorities for new construction, facilities renovations, deferred maintenance and space utilization with academic and strategic goals.

### 4.1.6

Increase investments in technology and infrastructure to support the strategic priorities.

### **THEME 5.0:**

### TELL THE LINCOLN UNIVERSITY STORY

EFFECTS	STRATEGIC OBJECTIVES
5.1	5.1.1
Lincoln University's reputation is based	Develop and implement a strategic marketing
upon the quality of its graduates and its	and communication plan that is designed to reach
history and legacy as an HBCU. Its liberal	and influence all major stakeholder groups,
arts focus promotes social responsibility and	provide greater coherence for the Lincoln
global engagement. The University excels	University brand and position the University to
not only at producing well-prepared	compete for students, talent and financial
graduates but also at telling its own story. It	resources.

educates and informs major stakeholders	5.1.2
about its accomplishments and successes,	Develop strategies for educating and engaging
which generates goodwill and additional	Lincoln students and alumni in telling the story.
resources to support its vision. Every	5.1.3
member of the Lincoln University	Develop and implement a strategic advancement
community understands the vision and	plan that is designed to engage all major
mission and tells the story from his or her	stakeholder groups, create a culture of
perspective. The messages that are	philanthropy and position the University for
disseminated are consistent with the	increased philanthropic support and alternative
University brand and support building its	revenue streams.
reputation. Telling the Lincoln story builds	
pride and motivates everyone to do more to	
achieve results.	

### FOCUS OF THE COMPREHENSIVE DEVELOPMENT PLAN (CDP)

The majority of the and goals delineated in the strategic plan, "*Reimagining the Legacy: Learn. Liberate. Lead.*", are relevant to this 2020-2025 FUTURE Act's Comprehensive Development Plan. An intentional effort will be made to attain results that reflect the aspirations of the Plan's Themes while yielding a positive impact on the University. Consequently, the Title III activities that will be implemented are designed to strengthen the University in areas that have been identified in this CDP.

The *Title III Program Focus Areas (FISA):* Fiscal Stability (F), Institutional Management (I), Student Services and Outcomes (S) and Academic Quality (A) refer to broad areas under which allowable activities must fall. Each approved Title III activity must address one of these focus areas. Lincoln's proposed activities for the 2020-2025 grant cycle comply with this requirement. For this grant application, there are **three (3) activities** that are related to the *Academic Quality Focus Area:* 

#### **Academic Quality Focus Area Activities**

- > Activity I: Expanding And Advancing Opportunities And Diversity In The Health Professions
- > Activity II: Strengthening STEM Majors Through The Provision Of Supplemental Resources

> Activity III: Strengthening The William K. Dadson Entrepreneurship Center (WDEC)

### **Related Legislative Allowable Activity (LAA)**

The three (3) activities described in the 2020–2025 Comprehensive Development Plan (CDP) relate to the following legislative allowable categories:

- Activity I: Expanding And Advancing Opportunities And Diversity In The Health Professions (*LLA-1, 3,4, 6*)
- Activity II: Strengthening STEM Majors Through The Provision Of Supplemental Resources (*LLA-1, 2, 3, 4, 6*)
- Activity III: Strengthening The William K. Dadson Entrepreneurship Center (WDEC) (*LLA- 1, 3, 4, 6*)

### **CONCLUSION**

The activities included in this application support the fundamental premises and associated strategic themes and objectives identified by the University. Through each activity's achievement of its respective objectives and performance indicators, the outcomes and results demonstrated will impact the accomplishment of the University's Strategic Themes. The following four (4) Themes align with the FUTURE Act's CDP:

- > THEME 1.0: Build A Culture That Supports Student Success
- > THEME 2.0: Enhance Academic Quality And Achieve Operational Excellence
- > THEME 3.0: Develop Strategic Partnerships To Leverage Resources And Assets
- > THEME 4.0: Strategically Align Resources To Support Institutional Priorities

A variety of procedures and studies are continually used to determine the needs of students, faculty, and administration. These processes provided an ongoing assessment capability for our Title III requests. Examples of the methodologies used are listed below:

- Studies of student performance on standardized tests (entrance and upon graduation);
- Discussions about the curriculum and a comparison of content, purpose, etc., with those of other similar institutions;
- Classroom observations;
- Audits and reviews of the University's administration and management;

- The use of comprehensive long-range planning studies; and,
- Various University annual and fiscal reports.

#### **Evaluation Strategy**

Lincoln has mechanisms for monitoring and evaluating the activities of the University regularly. The President's Senior Team assumes the leadership for engaging in the institution's decision-making strategies, through the use of information and data collected and evaluated on a routine basis, from monthly to annually. Mrs. Marion Bernard Amos, Assistant Provost/Title III Project Director, ensures that the Senior Team has current information and data related to Title III requirements and the status of the University's programmatic accomplishments.

During each grant year, she ensures that external, summative evaluations are conducted and that Title III staff and activity directors receive training specific to program reporting, implementation, and assessment. The objectives of an external evaluation are to:

- Assess and evaluate the status of each of the University's Title III activities to its stated objectives, milestones, and performance evaluation measures;
- Assess the internal monitoring procedures used by the Title III Director and the University to plan, manage, and evaluate the total Title III efforts;
- Review activity budgets and expenditures and assess them in regards to grant compliance and activity projections; and,
- Determine the impact to date of the activities on the University.
- Interviews and document reviews will be used to ascertain the following information:
- Institutional goals over the Title III grant cycle
- Institutional goals over the current academic year
- Specific objectives over the Title III grant period
- Specific objectives over the current academic year
- Specific objectives accomplished to date and corresponding performance evaluation measurements with documentation
- Specific objectives in progress for the year and projected time of completion
- Specific objectives toward which no progress has been made
- Total funds granted over the grant period
- Percent of budget spent to date

- Percent of objectives accomplished to date
- Expenditures to date
- Funds encumbered to date

The priorities outlined in the Comprehensive Development Plan will form the foundation of program evaluation for Title III funded activities. The strategies enumerated to address challenges will ensure that program results represent the achievement of identified priorities. Along with carrying out the above strategies, the extent to which the programs' goals and objectives are consistent with institutional goals and the University's mission and vision will be evaluated. A further effort will be made to determine whether the objectives are realizable within resource constraints and that they are understood and disseminated to the faculty and staff members who must attain them. The overriding emphasis will be on determining the outcome/impact of the activities on the University's Strategic Plan ("Reimagining the Legacy: Learn. Liberate Lead.") and the Future Act's Comprehensive Development Plan (CDP). Through effective and efficient implementation, the CDP's activities will play a significant role in assisting the University in facilitating its efforts toward continual viability and self-sufficiency.

#### **ACTIVITY I**

## EXPANDING AND ADVANCING OPPORTUNITIES AND DIVERSITY IN THE HEALTH PROFESSIONS

#### **NARRATIVE**

The *Expanding and Advancing Opportunities and Diversity in the Health Professions* activity is consistent with the legislatively allowable use of funds set forth by the United States Department of Education Higher Education Act of 1964 to support the "purchase, rental, or lease of scientific or laboratory equipment for educational purposes, including instructional and research purposes" and "academic instruction in disciplines in which Black Americans are underrepresented."

The development of innovative curricula, programs, and career pathways that prepare students for the careers where minorities are underrepresented is central to our institutional mission and strategic plan. The nursing program at Lincoln University is acutely aware of the ongoing challenge of health disparities. Increasing the number of diverse healthcare providers has become a high priority. By the year 2044, it is anticipated that more than 50% of Americans will belong to a minority group. However, only about 20% of registered nurses are from a racial or ethnic minority. Men also are a minority in the nursing workforce, representing only 11% of R.N.s, according to recent studies. All national nursing organizations, the federal Bureau of Health Workforce hospital associations, nursing philanthropies and other stakeholders within the health care community agree that recruitment of underrepresented groups into nursing is a priority for the nursing profession in the U.S.

The Institute of Medicine report, *The Future of Nursing: Leading Change, Advancing Health*, provided a thorough examination of how nurses' roles, responsibilities, and education should change to meet the needs of an aging, increasingly diverse population and to respond to a complex, evolving health care system.

Prior SAFRA funding provided opportunities for the nursing department to advance its curriculum, NCLEX preparation, and faculty development. We were able to successfully:

• Focused on working with students in the third and fourth years to strengthen their knowledge, skills, and test-taking skills. Twenty seniors and fourteen juniors participated

in the ATI test-taking strategies workshop offered in the fall semester of 2020. We had 100% participation.

- Assisted ninety percent (90%) of senior nursing students in meeting all program requirements and graduate.
- Assisted ninety percent (90%) of the students to apply to take the registered nursed (NCLEX) licensure exam and also apply to different states for licensure.
- Reviewed and revised the curriculum by providing the opportunity for one hundred percent (100%) of the faculty members to meet with a nursing education specialist.
- Expanded and Integrated the simulation capability of the Program into the curriculum.
- Increased the success rate on the NCLEX-RN exam from 54.17% to 71.6% by providing academic support to the junior and senior nursing students throughout the academic year.
- Strengthened the Program by integrating ATI NCLEX Review, ATI Virtual Coach, Kaplan NCLEX Review and integration of predictor exams.

Lincoln University (L.U.) is ranked number one among all four-year universities in Pennsylvania for student mobility (the percentage of students who come from families in the bottom fifth of incomes and end up in the top fifth of incomes), according to a 2017 study published by the Equality of Opportunity Project. Lincoln University (L.U.) is the first HBCU in the nation. The Title III project has an overarching goal of improving student engagement, achievement, persistence, and completion. Throughout its history, L.U. has provided opportunities for students who would not have otherwise been able to seek higher education. The Bachelor of Science in nursing program expands the opportunities for minority students. The Program addresses the need to increase the diversity of health professions. There is a need to improve the preparation of Registered Nurse (RN) students to increase the licensure (NCLEX) pass rates to meet the Board of Nursing and Accrediting agency requirements. Additionally, Lincoln University wants to expand its program offerings to broaden diversity in the health professions further.

#### ANTICIPATED OUTCOMES

The support of Title III funding will help Lincoln University to meet its goals of expanding and advancing Opportunities and Diversity in the Health Professions. Key outcomes of this grant cycle will be:

### <u>Year 1</u>

- Enrollment will be increased by 15%.
- Continue to improve the Nursing Program rigor by developing two (2) mentorship initiatives, one (1) for new faculty and one (1) peer mentorship program for students.
- A minimum of three (3) early intervention strategies (content mastery checks, tutoring and remediation) will be implemented.
- Faculty will begin to develop one (1) new major, Bachelor of Science in Health Informatics (Clinical Applications Minor), another program where minorities are underrepresented.
- The capability of the existing simulation lab will be expanded by purchasing a minimum of one (1) simulation mannequin to expose students to experiential learning instead of passive learning and permits immediate feedback.
- Students will enhance their ability to receive training virtually through the purchase of a minimum of one (1) virtual learning platform that provides virtual patients to strengthen students' hands-on experiences.

### Year 2-Year 5

- Enrollment will be increased by at least 25% each year.
- The Peer Mentoring Program will serve a minimum of twenty (20) students.
- A minimum of ten (10) students who avail themselves of the services offered through the early intervention strategies (content mastery checks, tutoring and remediation) will improve their assessment results on the integrated examinations.
- The one (1) new major, Bachelor of Science in Health Informatics (Clinical Applications Minor), will be offered during the 2021-2022 academic year and will enroll at least eight (8) students during the first year.
- The one (1) new major, Bachelor of Science in Health Informatics (Clinical Applications Minor), will enroll a minimum of sixteen (16) students during academic years 2022-2023 to 2024-2025, the end of the grant cycle.
- The capability of the existing simulation lab will be expanded by purchasing a minimum of one (1) updated simulation mannequin to expose students to experiential learning during Year 2 to Year 5.
- A minimum of two (2) additional technology enhancements will be made.

- A minimum of ninety-five percent (95%) of senior nursing students will meet all program requirements and graduate.
- A minimum of ninety-five percent (95%) of the students will apply to take the registered nursing (NCLEX) licensure exam and they will also apply to different states for licensure.
- The success rate of students who take the NCLEX-RN will increase from 71.6% to 80% by providing academic support to the junior and senior nursing students throughout the academic year.

### **RELATIONSHIP TO THE UNIVERSITY'S STRATEGIC PLAN**

The Nursing Program plans and objectives directly align with the institution's mission. Lincoln University's mission and the mission of the proposed nursing curricula, programs, and career pathways are congruent. Lincoln University is an institution whose mission is to:

- Providing a rigorous liberal arts education featuring active and collaborative learning;
- Integrating academic and co-curricular programs with the University's distinctive legacy of global engagement, social responsibility, and leadership development; and
- Cultivating the character, values, and standards of excellence needed to enable students to become responsible citizens of a global community.

STRATEGIC THEME	STRATEGIC PRIORITIES
Enhance Academic Quality and Achieve Operational Excellence	<ul> <li>Ensure every Lincoln Lion Graduates with a Competitive Edge</li> <li>Prepare Students for Life and Career Through Curricular and Co-Curricular Activities</li> </ul>
Develop Strategic Partnerships to Leverage Resources and Assets	<ul> <li>Establish Requirements and Expand Strategic Partnerships.</li> <li>Expand opportunities and diversity</li> </ul>
Strategically Align Resources to Support Institutional Priorities	<ul> <li>Support Scholarly and Creative Excellence</li> <li>Invest in simulation and health information technology Integration</li> <li>Expand Signature Academic Program</li> </ul>

#### **KEY PERSONNEL NEEDED TO ACCOMPLISH PROGRAMMATIC OUTCOMES:**

The Activity Director is the Chair of the Department of Nursing and will ensure that the implementation strategies are completed to assure that the objectives and performance indicators are met and that quantifiable outcomes will be documented. There are two (2) faculty salaries supported through this activity. The faculty members will be responsible for 1) coordinating the online RN-BSN and teaching within the Program, and 2) the second faculty member will be the Coordinator of the Baccalaureate in Healthcare Informatics and teaching.

# ACTIVITY OBJECTIVES AND PERFORMANCE INDICATORS

1. Name of Applicant Institution: LINCOLN UNIVERSITY	2. Activity #/Title: Expanding And Advancing Opportunities And
	Diversity In The Health Professions
ACTIVITY OBJECTIVES	PERFORMANCE INDICATORS
<b>1.0</b> To strengthen and expand the BSN Program by increasing enrollment by twenty-five percent (25%) by launching student support initiatives that will assist students in entering the Nursing Program and graduating from the Program by September 30, 2022 (Baseline Enrollment = 20).	<b>1.1</b> Enrollment will be increased by at least 15% by September 30, 2021.
	<b>1.2</b> 75% of the current students will be retained by August 2021.
	<b>1.3</b> The University will employ two (2) full-time faculty members and four (4) adjunct faculties by Summer 2021 to support students in attaining required competencies.
	<b>1.4</b> The Nursing Peer-Mentoring Program will be launched during the Fall 2020 semester, either virtually or on campus.
	<b>1.5</b> At least three (3) senior nursing students will serve as peer tutors (virtually or on-campus) starting in Fall 2020.
<b>2.0</b> To expand the capability of the existing simulation lab by purchasing a minimum of two (2) upgraded simulation mannequins, along with simulation case scenarios and monitors,	<b>2.1</b> A minimum of one (1) simulation mannequin and other resources and technology will be purchased to strengthen students' hands-on experiences during the 2020-2021 academic year.
computers for electronic health record access, medication carts, IV poles, isolation carts, resuscitation carts during the 2020-2021 academic year.	<b>2.2</b> A minimum of one (1) virtual learning platform, for example, iHuman Patients, that provides virtual patients, will be purchased to continue to offer students remote hands-on experiences during the academic year.

	<b>2.3</b> A minimum of four (4) training opportunities (virtually or on-campus) will be provided faculty, including ongoing training in the SIMS Lab by May 2021.			
	<b>2.4</b> At least two (2) nursing education specialists in Pathophysiology, pharmacology and adult health – Medical/Surgical will assist faculty with less than two years teaching experience to enhance their instructional methodology to improve students' attainment of competencies annually.			
	<b>2.5</b> Two (2) stipends will be provided to increase the number of faculty members who are Certified Nurse Educators (CNE) during the 2020-2021 grant year.			
<b>3.0</b> To ensure accessibility to an RN-BSN Nursing Program by redesigning and revising the RN-BSN to be offered fully online by Spring semester 2022 with an enrollment of at least ten (10) students.	<b>3.1</b> Approval for the development of the online RN-BSN Program (1) will be attained from the Pennsylvania Board of Nursing by March 2021.			
	<b>3.2</b> The curriculum plan (1) to convert the in-seat RN-BSN Program to online will be completed by May 2021.			
	<b>3.3</b> Launch the RN-BSN Program online by Spring 2022 and a minimum of ten (10) students will enroll.			
<b>4.0</b> To strengthen the career pathway into the RN-BSN Program or provide an alternative Health Science career pathway by designing, developing and launching a Bachelor of Healthcare Informatics Program that will enroll a minimum of eight (8) students by Fall 2021.	<b>4.1</b> Approval from the University to develop a Bachelor of Science in Healthcare Informatics Program (1) will be attained by March 2021.			
	<b>4.2</b> The curriculum plan (1) for the Bachelor of Healthcare Informatics Program will be completed by August 2021.			

<b>4.3</b> Launch the Bachelor of Healthcare Informatics Program by Spring 2022 and a minimum of eight (8) students will enroll.

# **IMPLEMENTATION STRATEGY TIMETABLE FORM**

Name of Applicant Institution: LINCOLN UNIVERSITY		Activity Title: Expand and Advance Opportunities and Diversity in the Health Professions				
Specific Tasks to be Completed	Primary Participants	Methodologies Involved	Tangible Results	Start Date	End Date	
<b>1.1</b> Increase enrollment by at least 15% annually to a goal of 50 annually. (Average level size is 20 students). Retain up to 85% of students per level by graduation.	Administration, faculty/advisors, resource staff, admissions	Open houses, off-site recruiting activities, brochures, nursing program website, social media	Student enrollment increased by 15% annually. The goal of 50 students per level, per yr.	2020	Ongoing	
<b>1.2</b> The University will employ two (2) full-time faculty members and four (4) adjunct faculties by summer 2021 to support students in attaining required competencies.	Nursing Nursing faculty advisors	Advertisements, recruitment efforts, interviews	At least one faculty member will be hired for the 2020- 2021 academic year. An additional faculty member will be hired for the 2021- 2022 academic year. At least two additional adjuncts will be hired for fall 2020, and two adjuncts in Spring 2020.	2020	Ongoing	
<b>1.3</b> The Nursing Peer- Mentoring	Director of	Faculty Advisement	At least three senior nursing	2020	Ongoing	

The program will be launched during the Fall 2020 semester, either virtually or on campus.	Nursing faculty and students	Mentoring Living Learning Communities	students will agree to be peer mentors Mentor will attend at least two mentoring sessions		
<b>1.4</b> Hire senior nursing students as nursing student tutors each school year, starting in fall 2020.	Nursing Nursing	Hire nursing students Assign juniors to seniors Provide faculty advisor to monitor students	At least 50% of senior nursing students will participate in tutoring and mentoring.	2020	Ongoing
<b>1.5</b> A minimum of one (1) simulation mannequins and other resources and technology will be purchased to strengthen students' hands-on experiences during the 2020-2021 academic year.	Department Chair Nursing Faculty	Purchase SimMan and simulation equipment, Initial and ongoing simulation training for faculty, In-services, seminars, faculty development	Simulated Intensive Care Unit established	2020	Ongoing
experiential capabilities	Administration, faculty, students, partner institutions	Agreements, Meetings, consultations	Sim experience integrated into clinical courses	2020	Ongoing
1.7 Integrate Intensive Care Unit into Sim Center	Administration, faculty, students, partner institutions	Partner Agreements, Meetings, consultations	Sim experience integrated into clinical courses	2020	Ongoing
<b>1.8</b> Provide ongoing training of Sim Center Coordinator and Lead faculty.	Administration, faculty, students, partner institutions	Partner Agreements, Meetings, consultations	Sim experience integrated into clinical courses	2021	Ongoing
1.0	Γ				
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1.9Integratenewsimulationcasescenariosanddebriefinginsimulation	Administration, faculty, students, partner institutions	Partner Agreements, Meetings, consultations	Sim experience integrated into clinical courses	2021	Ongoing
2.1 A minimum of one (1) virtual learning platform, for example, iHuman Patients, that provides virtual patients, will be purchased to continue to offer students remote hands-on experiences during the academic year.	Department Chair Nursing Faculty	Integrated learning and High Impact Pedagogical practices Virtual simulation integrated into courses	iHuman patients integrated into at least three courses.	2020	Ongoing
2.2 A minimum of four (4) training opportunities (virtually or on- campus) will be provided faculty, including ongoing training in the SIMS Lab by May 2021.	Faculty and administration	Faculty collaboration Faculty training selection	At least 50% of faculty participate in faculty development opportunities	2020	Ongoing
2.3 At least two (2) nursing education specialists in Pathophysiology, pharmacology and adult health – Medical/Surgical will assist faculty with less than two years teaching experience to	Director of Nursing Faculty and administration	Needs Assessment Hire a nursing education consultant	The content and strategies in the three (3) designated courses will be revised.	2020	Ongoing

enhancetheirinstructionalmethodologyimprovestudents'attainmentofcompetenciesannually.2.4TwoTwo(2)stipendswill be provided toincreasethenumber of facultymemberswho areCertifiedNurse	Director of Nursing Faculty and administration	Faculty will attend certification conferences Faculty will sit for certification	At least two faculty will attain CNE certification by 2021	2020	Ongoing
Educators (CNE) during the 2020- 2021 grant year. <b>3.1</b> Approval for the development of the online RN-BSN Program (1) will be attained from the Pennsylvania Board of Nursing by March 2021.	Nursing faculty and State Board of	exam Revise and update existing curriculum for new online RN- BSN Redevelop and design a website as a major communication tool.	Nursing website designed to inform students and potential candidates Approval gained on RN- BSN online program.	2020	Ongoing
<b>3.2</b> The curriculum plan (1) to convert the in-seat RN- BSN Program to online will be completed by May 2021.		Director, and nursing faculty, reviewing and	RN-BSN courses converted to an online format. Courses will be established in the Learning Management System.	2020	Ongoing
<b>3.3</b> Launch the RN- BSN Program online by Spring 2022 and a	Director of Nursing Nursing faculty Admissions	Recruitment and marketing information developed.	At least eight students	2020	Ongoing

minimum of ten (10) students will enroll.	Registrar State Board of Education	Programmatic information available on the website	enrolled in the Program		
<b>4.1</b> Approval from the University to develop a Bachelor of Science in Healthcare Informatics Program (1) will be attained by March 2021.	Director of Nursing Nursing faculty Admissions Registrar State Board of Education	Program and curriculum developed Curriculum submitted to the University curriculum committee.	Program approval gained	2020	Ongoing
<b>4.2</b> The curriculum plan (1) for the Bachelor of Healthcare Informatics Program will be completed by August 2021.	Nursing Nursing faculty Admissions Registrar	Curriculum plan and courses outlined and developed. Intra-department members selected	General Education requirement outlined Teaching faculty from departments (Health Sciences, Computer Science) enlisted.	2020	Ongoing

# **ACTIVITY I**

# ACTIVITY DIRECTOR'S CURRICULUM VITAE SUMMARY

#### Patrick Mattis, DNP, FHIMSS, MSN, MSCS, RN-BC, CPHIMS, CNE 1570 Baltimore Pike, Lincoln University, PA 19352 Phone Number: (917) 608-2036 Email Address: PLMattis@gmail.com

Academic Pre	Academic Preparation		
Year	Institution	Major Area of Study	Degree
2018- Present	University of the Cumberlands	Leadership	PhD
2009	Rutgers, School of Nursing Newark, NJ	Health Systems Leadership	Doctor of Nursing Practice (DNP)
2010	UMDNJ, School of Nursing	Comprehensive Systematic Review	Joanna Briggs Institute
2006	Pace University, Pleasantville, NY	Nursing Informatics	Master of Science Nursing
2003	Pace University, New York, NY	Nursing	Bachelor of Science
2002	Pace University, White Plains, NY	Computer Science	Master of Science
2000	Excelsior College, Albany, NY	Computer Information Systems	Bachelor of Science

Licensure:			
Registered Professional Nurse	State	License Number	Expiration Date
RN	New York	547416	11/30/2021

RN	Alabama	1-160687	12/31/2020
RN	Arizona	RN196945	4/1/2020
RN	District of Columbia	RN1052130	6/30/2020
RN	Florida	RN9424264	4/30/2021
RN	Georgia	RN254266	1/31/2020
RN	Idaho	51824	8/31/2019
RN	Illinois	41438660	5/31/2020
RN	Louisiana	207294	01/31/2020
RN	Maryland	R228391	12/28/2020
RN	Minnesota	2254456	12/31/2020
RN	Missouri	2016009365	4/30/2019
RN	Nebraska	81236	10/31/2020
RN	Nevada	RN87250	12/28/2021
RN	New Jersey	26NR13485400	5/31/2020
RN	North Carolina	293335	12/31/2020
RN	North Dakota	R47521	12/31/2020
RN	Oklahoma	R0125355	12/31/2018
RN	South Dakota	R051748	12/28/2020
RN	Tennessee	237248	12/31/2020
RN	Utah	11251682-3102	01/31/2021
RN	Washington	RN60961015	12/28/2019

### **Certifications:**

2011- Present Certified Nurse Educator (CNE)

2008- Present Nurse Informaticist, American Nurses Association

2007- Present Certified Professional in Health Information & Management Systems (CPHIMS)

2019 QM in Higher Education Online Learning Certification, Peer Reviewer

2018 QM in Higher Education Online Learning Certification, Rubric Update

### 2018 QM in Higher Education Online Learning Certification, Applying the QM Rubric

# **Professional Experience:**

#### **International Appointment:**

2019 - Present	University of Technology,	International External Examiner for
	College of Health Sciences	Nursing Programs

### **Academic Appointments**

2020 - Present	Lincoln University	Director & Chair/Professor, Department of Nursing
2016 - 2020	Chamberlain College of Nursing	Associate Professor, Doctor of Nursing Practice Program
2013 - 2016	Chamberlain College of Nursing	Visiting Professor, Master's in nursing programs
2010 - 2017	Rutgers University, School of Nursing, Newark, NJ	Assistant Professor Advance Practice MSN, DNP
2015 – 2017	Rutgers Community Health Center FQHC	Chief Information Officer
2015- 2016	Rutgers University, School of Nursing, Newark, NJ	Assistant Dean, Infrastructure and Technology Services
2012 - 2015	Rutgers University, School of Nursing, Newark, NJ	Assistant Dean Academic, and Informational Technologies and Services
2012 - 2015	Excelsior College	Adjunct Faculty Master of Science in Nursing Program
2012 - 2015	New York University	Visiting Professor Doctoral Nursing Practice Program
2010 - 2012	University of Medicine & Dentistry of NJ Support	Director, Nursing Information Tech Integration Simulation and IT
2013 - 2016	Chamberlain College of Nursing	Visiting Professor

		MSN Informatics program
2011 - 2017	Pace University Lienhard School of Nursing	Adjunct Associate Professor Doctor of Nursing Practice program
2007 - 2010	University of Medicine & Dentistry of New Jersey	Graduate Studies Instructor MSN programs
2006 - 2007	University of Medicine & Dentistry of New Jersey	Graduate Studies Clinical Instructor
<u>Clinical App</u>	<u>ointments</u>	
Year	Institution	Position
2006 - 2007	New York-Presbyterian - Morgan Stanley Children's Hospital New York, NY	Project Leader/ Systems Administrator Perioperative Services
2005 - 2008	Lawrence Hospital Bronxville, New York	Registered Nurse – Critical Care Unit
2005 - 2006	NYC Health and Hospital Corporation New York, NY	Health Information Technology Systems Implementation Consultant
2003 - 2006	Mount Sinai Medical Center New York, NY	Registered Clinical Nurse – Transplant Institute
2006-2009	Mount Sinai Heart Cardiac Catheterization Lab Mount Sinai Medical Center New York, NY	Registered Clinical Nurse –
	Mount Sinai Medical Center Ambulatory Center New York, NY	Registered Clinical Nurse

# ACTIVITY II STRENGTHENING STEM MAJORS THROUGH THE PROVISION OF SUPPLEMENTAL RESOURCES

#### **NARRATIVE**

Lincoln University's STEM majors require supplemental resources to sustain the rigor and relevance of our departments and programs. Faculty's engagement in all aspects of STEM research, including discipline-based education research and data science will be enhanced through the implementation of this Activity. Also, this support will allow faculty to facilitate curricular innovations, and implement research-based instructional strategies, fostering more interactive engagement and student-centered activities in the classroom. The funding of this Activity will also support faculty to increase the number of independent research projects for students while contributing new knowledge to their fields. Many faculty are merging their research and curricular efforts to develop course-based research and authentic learning experiences (learning experiences that engage students in settings that closely align with professional practices in the disciplines).

A primary focus of this Activity will be to not only provide technology and other resources to undergird faculty's ability to prepare students in STEM areas but also to recruit and maintain a strong STEM faculty, to; 1) strengthen interdisciplinary collaborative scholarship, 2) increase faculty research initiatives and 3) increase curriculum development initiatives allowing Lincoln to continue to provide a rich educational experience for our students, thereby making them more competitive for work or graduate school. The Activity will specifically address the need to improve critical thinking skills, which has repeatedly been identified by both direct and indirect assessment. In support of these efforts, funding is requested to supplement the salary of the two STEM faculty. We seek to attract faculty whose area of research will complement our efforts to expand critical discipline expertise within their respective departments.

Another primary focus of this Activity is to transform two (2) traditional classrooms into Active Learning Space (ALS) classrooms. Recent studies continue to show that active spaces (e.g., moveable workstations and whiteboards) have a more significant impact on student learning outcomes and motivation than technology-filled classrooms (Baepler et al., 2016, Soneral and Wyse, 2017, Stoltzfus et al., 2016). The combination of such features facilitates an exceptional learning experience.

### **MAJOR ANTICIPATED OUTCOMES**

#### <u>Year 1</u>

- A minimum of six (6) faculty within the STEM areas will have their teaching, research productivity, and scholarly/creative production enhanced by providing equipment, software, instructional and research supplies.
- Faculty will create at least one (1) new research-based course.
- At least two (2) additional courses in the STEM curricula will be revised or enhanced as a result of the new equipment and other resources.
- At least four (4) STEM courses will be enhanced to facilitate effective delivery of online instruction based on best practices.
- One (1) classroom will be converted into an Active Learning Space (ALS) for use by STEM faculty and students.
- One (1) faculty member will have 50% release time from teaching, or an adjunct will be hired to start course and module development and oversee ALS orders and installation.
- At least two (2) faculty will make enhancements to their courses to incorporate Active Learning strategies.
- Two (2) STEM faculty salaries will be supported that will increase student learning and collaborative faculty and student research by the end of the first two years of the grant (2020-2021 and 2021-2022).

### Year 2-Year 5

- A minimum of eight (8) faculty members will be able to regain research productivity efforts during Year 2-Year 5.
- 80% of the STEM faculty will also focus on the implementation of effective strategies for online learning.
- Virtual laboratory simulations and modules focused on data collection and observations (5 total) will begin in Year 3.
- Course-based and independent research projects will be conducted with at least **10%** of the majors (based on the number of declared majors each year) for Year 3 to Year 5.
- At least ten (10) additional online modules will be developed.

#### Implementation of this Activity will yield the following outcomes:

- Improved learning through high impact practices in active learning spaces
- New course-based research modules that focus on developing critical-thinking skills
- Much needed additions to full-time faculty in Biology and Chemistry, Physics and Engineering
- More opportunities for students to participate in mentored independent research at Lincoln University
- Opportunities for students and faculty to showcase their research accomplishments at annual science fairs and conferences.

#### **RELATIONSHIP TO UNIVERSITY'S STRATEGIC PLAN**

Lincoln's Strategic Plan, "*Reimagining the Legacy: Learn. Liberate. Lead.*" is designed to advance the institution's g history in the context of the 21st century. Particular attention is paid to teaching innovations and more deliberate efforts to develop and hone important intellectual and interpersonal skills. Toward these ends, the plan has two broad aims: (1) to operationalize the University's distinctive education model and (2) to identify the processes, policies and resources needed to realize the educational goals.

The overall goal of the Activity is to address the Lincoln University (LU) priority to invest in a way to build a technology-rich teaching and learning environment that will create new learning opportunities at the intersection of business and liberal arts. Strengthening STEM majors is critical to achieving this goal. This Activity further aligns with LU's Strategic plan by promoting academic innovation through supporting scholarly and creative excellence, investing in technology integration and expanding STEM academic programs. The Activity aligns with the ongoing University curricular coherency process, which will transform the curriculum and increase high impact practices across disciplines. Through this process, the Biology program is specifically focused on increasing active classroom engagement to improve critical thinking skills, incorporate more course-based undergraduate research experiences, and expand opportunities for independent research to all undergraduate students in the program.

STRATEGIC THEME	STRATEGIC PRIORITIES
DELIVER THE	• Ensure every Lincoln Lion Graduates with a Competitive Edge
LINCOLN PROMISE	• Prepare Students for Life and Career Through Curricular and
	Co-Curricular Activities
PROMOTE	Support Scholarly and Creative Excellence
ACADEMIC	Invest in entrepreneurs and Technology Integration
INNOVATION	Expand Signature Academic Program
	• Transform STEM curricula through active learning innovation
	and course-based research opportunities

#### **KEY PERSONNEL NEEDED TO ACCOMPLISH PROGRAMMATIC OUTCOMES:**

The Activity Director is the Co-Chair of the Biology Department and will ensure that the implementation strategies are completed to assure that the objectives and performance indicators are met and that quantifiable outcomes will be documented. Two new Assistant Professors in a STEM area with research and teaching experience will be hired to strengthen student learning and research capabilities in Year 2 of the grant cycle..

# ACTIVITY OBJECTIVES AND PERFORMANCE INDICATORS

Name of Applicant Institution:	Name of Activity:
	Strengthening STEM Majors Through The Provision Of Supplemental Resources
Major Objectives in Measurable Terms	Performance Indicators to Measure Success
<b>1.0</b> To enhance the teaching, research productivity and scholarly/creative production of a minimum of six (6) faculty within the STEM areas by providing equipment, software, instructional and research supplies by May 2021.	<b>1.1</b> Faculty will create at least one (1) new research- based course by August 2021.
	<b>1.2</b> At least two (2) additional courses in the STEM curricula will be revised or enhanced as a result of the new equipment and other resources by August 2021.
	<b>1.3</b> One (1) classroom will be converted into an Active Learning Spaces (ALS) for use by STEM faculty and students by September 30, 2021.
	<b>1.4</b> One (1) additional classroom will be converted into an Active Learning Spaces (ALS) for use by STEM faculty and students by September 30, 2022.
	<b>1.5</b> One (1) faculty member will have a 50% release time from teaching, or an adjunct will be hired to start course and module development and oversee ALS orders and installation by October 1, 2020.
	<b>1.6</b> At least two (2) faculty will make enhancements to their courses to incorporate Active Learning strategies by August 2021.

Name of Applicant Institution:	Name of Activity:
LINCOLN UNIVERSITY	Strengthening STEM Majors Through The Provision Of Supplemental Resources
Major Objectives in Measurable Terms	Performance Indicators to Measure Success
	<b>1.7</b> Faculty and students will present their research findings at a minimum of two (2) annual science fairs and conferences by May 2022.
	<b>1.8</b> At least three (3) students will be provided the opportunity to participate in independent or course-based research projects in the STEM areas by July 2021.
<b>2.0</b> To strengthen the University's STEM majors by supporting two (2) faculty salaries that will increase student learning and collaborative faculty and student	<b>2.1</b> The Assistant Provost will initiate three (3) processes (advertising, interviewing and employment) by December 2020.
research by the end of the second year of the grant (2021-2022).	<b>2.2</b> Two (2) faculty members with research experience will be hired by July 15, 2022.
	<b>2.3</b> A minimum of three (3) additional STEM courses will be infused with higher-order thinking learning outcomes that will strengthen student and faculty research initiatives by August 2022.

# **IMPLEMENTATION STRATEGY/TIMETABLE FORM**

Name of Applicant Institution:		Activity Title:				
LINCOLN UNIVERSITY		Strengthening STEM Majors Through The Provision Of Supplemental Resources				
Specific Tasks to be Completed	Primary Participants	Methodologies Involved	Tangible Results	Start Date	End Date	
The University will advertise and hire to STEM faculty	Provost Dean STEM faculty	The University will select the methods that will be utilized to advertise the positions	Two (2) faculty will be employed during the grant year	December 2020	When Hired	
New faculty will be required to work with existing faculty to identify additional learning outcomes that will strengthen research initiatives	New Hires STEM Faculty	A review of the curriculum will identify opportunities for introducing more research initiatives	At least three (3) courses will be enhanced	Fall 2020 Semester	Fall 2022	
Identify and procure equipment for instruction for STEM Majors	STEM faculty Title III Staff	BANNER requisition process for small purchases	100% of equipment ordered and received for STEM majors	October 1, 2020	January 2021	
Procure supplies for instruction for STEM Majors	STEM faculty Title III Staff	BANNER requisition process for micro- purchases	100% of supplies ordered and received for new STEM faculty.	October 1, 2020	August 15, 2021	
Identify research projects to be conducted by new STEM faculty and students	STEM faculty and students	Abstracts of the proposed research will be developed and resources needed, if not available submitted to Title III Office for funding	A minimum of six (6) research projects will be completed during the grant period	August 2021	September 30, 2022	

Name of Applicant Institution: LINCOLN UNIVERSITY		Activity Title:					
		Strengthening STEM Majors Through The Provision Of Supplemental Resources					
Specific Tasks to be Completed	Primary Participants	Methodologies Involved	Tangible Results	Start Date	End Date		
Space will be identified to be renovated for the Active Learning Space	Academic Affairs Facilities	Faculty and Facilities will identify other institutions with STEM Active Learning Spaces to determine the requirements for developing one at Lincoln	One (1) Active Learning Space will be completed	November 2020	March 2021		
Obtain quotes for equipment for Active Learning Space	STEM Department	BANNER requisition process for small purchases	Quotes will be attained for 100% of the equipment consistent with University guidelines	December 2020	Completed		
Review STEM Programs at other institutions to attain new instructional strategies that can be incorporated into the revision or enhancements of course lectures, laboratory requirements or use in the Active Learning Space	STEM Department	Faculty will benchmark three (3) courses against courses at other institutions to incorporate additional teaching strategies and learning outcomes into existing courses	At least three (3) courses and one (1) laboratory will be enhanced	October 2020	August 2022		

# **ACTIVITY II**

# ACTIVITY DIRECTOR'S CURRICULUM VITAE SUMMARY SUSAN E. SAFFORD

Professor, Biology Department 1570 Baltimore Pike Lincoln University <u>safford@lincoln.edu</u> Lincoln University, PA 19352

Office: (484) 365-7512 FAX: (484) 365-7906 E-Mail:

Cell: (610) 212-8849

#### EDUCATION and TRAINING

**University of Kentucky** Lexington, KY Postdoctoral Training in Toxicology ...1992-1993

**University of Texas** Austin, TX Ph.D. in Zoology ...1992

**University of Massachusetts** Amherst, MA M.S. in Fisheries and Wildlife Biology ...1985

University of Southern Mississippi Hattiesburg, MS

B.S. in Biology, minors in chemistry and genetics ...1977

#### **Professional Appointments**

<b>Affiliated Professor</b>	University of Delaware	June 2008 – Present
Professor	Lincoln University	June 2009 - Present
Associate Professor	Lincoln University	Aug. 2002 – May 2009
Assistant Professor	Lincoln University	Aug. 1993 - July 2002

ADMINISTRATIVE, LEADERSHIP and GOVERNANCE experience

#### Administrative Experience

Lincoln University

- Interim Co-Chair, Biology Department, Lincoln University
- Chair, Institutional Review Board, Lincoln University
- Co-Chair for Governance Standard, Middle States Review Committee, 2007-2008 and 2017-2018
- Director of NIH Research Grants

#### Leadership Experience

Lincoln University

- Chair, Research Projects Committee, Fox Chase Partnership NIH Grant
- Member, Administrative Leadership Group oversight committee of Fox Chase Partnership NIH Grant
- Member, Internal Advisory Board of Fox Chase Partnership NIH Grant
- Member, Internal and External Advisory Boards for Research Infrastructure in Minority Institutions grant with Pennsylvania State University
- Past Faculty Representative to the Board of Trustees
- Parliamentarian, University Faculty Meetings
- Chair, Faculty Nominations, By-Laws and Faculty Development Committees

#### AREAS OF EXPERTISE

Curriculum Development \* Pedagogical Change \* Mentoring Undergraduates in Research \* Assessment of Student Learning Outcomes \* Academic Advising \* Grant Writing \* Grants Management \* Managing a Funded Laboratory

#### Research and teaching experience

**Lincoln University:** I teach General Biology I for majors, Human Anatomy and Physiology I and II, Vertebrate Physiology, Comparative Anatomy, Endocrinology, Senior Seminar; Manage a funded research laboratory; Mentor research students

Major Accomplishments: During my tenure at Lincoln University, I developed the Endocrinology class and shepherded it through the approval process; I recently updated it to include a module on endocrine disrupting chemicals. This has resulted in one student deciding to pursue this area in graduate school after graduation this coming May. I recently reconfigured General Biology I for Majors so that the course has new content, active-learning pedagogy including pair-share and case studies, and new lab modules to include multiple authentic research problems in plant biology and vertebrate animal physiology. I recently revised Comparative Anatomy and Vertebrate Physiology to be held in two three-hour blocks of time to more easily intertwine lecture with lab and include complex case studies. The students are more enthusiastic about these courses and credit this pedagogy with helping them be successful on the MCATs, GREs, and in first year graduate and medical school. I have included more math modules in all my classes to increase student's quantitative literacy. This interest has led to the NSF grant I currently hold to develop an app to assist students in math application problems in biology. For 12 years I managed an NIH-funded laboratory, which included undergraduate student researchers. In subsequent years, I have obtained small grants to cover undergraduate researchers and we are working on identifying isoforms of a calcitriol-binding protein. I have also forged relationships with nearby research-intensive universities and built on these to provide summer internship opportunities for our students as well as research collaborations for myself. I expanded these relationships in 2015, by partnering with the University of Pittsburgh in a state CURE grant. This grant is focused on "Big Data" and allows 4-5 students a summer and 1-2 faculty a year to participate in internships and training on various topics that involve "Big Data".

**Doume, Cameroon:** I was a Peace Corps Volunteer and worked as a Fisheries Extension Agent, April 1980 - July 1982. I helped fish farmers build and improve ponds, stock, manage and harvest correctly, and market at a profit. I wrote monthly reports in French and a pamphlet in both English and Ewondo, a local language, on barrage pond construction. I represented the fish culture sector

in meetings with Cameroonian officials and visiting the World Bank and African delegations. Before leaving my service, I helped train incoming volunteers in 1982.

**Major Accomplishments:** Assisted the Agricultural Commission in building a barrage pondstyle experimental fish farm in Doume, Cameroon, where local farmers could be trained and fish fingerlings grown for local distribution. I also expanded my predecessors' territory to include some more distant forest tribes who were interested in learning fish farming techniques and assisted several new farmers in establishing productive fish ponds.

**National Marine Fisheries Service:** I worked as Foreign Fishery Observer in the Bering Sea where I sampled catch and measured product recovery rates on board a Japanese longliner fishing vessel. My duties included keeping daily logs of catches, writing weekly reports, bringing back unusual specimens for NMFS.

**Gulf Coast Research Laboratory:** I was **a** laboratory technician. My duties included collecting monthly water samples in Bay St. Louis, MS for chemical and plankton analyses. I also prepared and analyzed nannoplankton and zooplankton samples and repaired and maintained sampling and lab equipment.

#### **RESEARCH GRANTS**

#### **CURRENT**

August 23, 2016 – December 30, 2020 – "Targeted Infusion Project: Expansion and Implementation of the Interactive LearningExpress App." Susan E. Safford, PI and Tiffanie Smith, co-PI, both of Lincoln University. My role on this grant is to collaborate with two other faculty members and three Biology students to oversee the creation and assessment of math application problems designed for an app that will be used to supplement teaching and learning of math problems in the natural sciences. In addition, I coordinate with the co-PI, who oversees three computer science students who are designing the app. I am also responsible for submitting annual reports and attending annual PI meetings.

May 2020 – December 2020 – "Developing Critical Thinking Across the Biology Curriculum." Susan E. Safford, PI. Faculty Development Grant. My role is to develop the syllabus for a new Foundation Course, Introduction to Biology Research and to create critical thinking modules for the courses I teach.

#### **RECENT**

January 1, 2013 – December 31, 2013 – "Genetic, Dietary, and Environmental Influences on Vitamin D Metabolism." Robin Taylor-Wilson of Penn State College of Medicine is the PI and my role is as a consultant in the area of the role of 1,25D<sub>3</sub>-MARRS in vitamin D metabolism.

July 1, 2008 – June 30, 2014 – "Research Infrastructure in Minority Institutions." This grant provided funding to enhance the research support office, build a neuroscience center, develop a nursing program, fund three major investigator-initiated projects, and fund several smaller investigator-initiated mini-projects. My role on this grant was to serve as a member of the Internal Advisory Board and I completed a small research project with funding from one of the mini-projects.

#### **ACTIVITY III**

# STRENGTHENING THE WILLIAM K. DADSON ENTREPRENEURSHIP CENTER (WDEC)

#### **NARRATIVE**

The Business & Entrepreneur Department provides a rigorous education that integrates the liberal arts, technology and innovation into its curriculum and co-curricular activities. This proposal requests Title III support to continue to strengthen the development and implementation of projects through the University's William K. Dadson Entrepreneurship Center (WDEC). This Activity will provide the resources to engage in curricular review and faculty re-tooling to ensure that the courses, co-curricular activities and instructional modalities are preparing students to be productive contributors to the innovative products that will be produced by Center participants. Also, state-of-the-art technologies will be provided for use by faculty and students to conduct research and to implement projects.

External experts will be identified to engage faculty and students in increasing their repertoire of knowledge and their ability to produce innovative products. A goal of the WDEC is to produce critical thinkers, entrepreneurs and innovators who are emerging masters of their practices and who have also mastered the associated innovations. The need for additional equipment in the WDEC relates to the growth of our programs that are required courses beginning fall 2020. As our programs grow and we update existing programs to support the needs of a 21st-century student born into a business and entrepreneurial world, additional tools-of-the-trades are required to uphold industry standards. More advanced tools are needed for teaching and learning in the programs in the Business Department. These tools are helping to shape the future entrepreneur in a world that is increasingly dependent on innovation. An expanded WDEC will not only support the requirements of our programs but mastering these tools will make Lincoln University's African American population more competitive for graduate school as well as entry-level professional positions.

The WDEC will collaborate with the Computer Science department by offering opportunities to integrate the technical skills, talents and research ideas of the faculty and students in the department into the activities of the Center. The collaboration will allow students to engage in research as well as provide academic support, professional development, career development

and a chance to enhance practical team building skills by working with students from other majors, including those in business.

The Computer Science Department seeks to expose students to different branches in computer science that are not currently explored in the department; this includes research and courses in trending areas of human computer interaction (HCI), gaming and virtual reality. Human computer interaction is an interdisciplinary field, anchored in Computer Science, that focuses on the design and development of interfaces utilized by human users in all fields, including those in the business and entrepreneurial sectors. While becoming more of a hot topic at research universities, HCI is not an area often included in the curriculum at the HBCU level. Often, interfaces designed using HCI techniques can be implemented through gaming and virtual reality technologies. These courses will not deter students from finishing their degree within four years but will serve as electives that will allow them a chance to delve into various topics that they could potentially pursue full time in an industry position or as a researcher if they choose to pursue a graduate education. As technology continues to have a significant impact on society, companies will continue to look for students who are knowledgeable on how to design and develop the latest technology not only to meet the company's needs, but also be well suited for the customer. This will allow Lincoln to stay at the forefront of research with the incorporation of HCI, as well as virtual and gaming technologies.

#### MAJOR ANTICIPATED OUTCOMES

The WDEC is intended to support curriculum development for new and existing programs by further integrating digital technology within a pedagogical framework. Title III funding will assist in increasing faculty and students' knowledge of best practices in Business & Entrepreneurship research through workshops and guest lectures; enhanced classroom instruction by purchasing and incorporating equipment into the teaching and learning experiences; and expanded faculty and students' ability to examine and apply innovation, building and testing of solutions for creative work and real-world problem-solving. Following are some of the measurable outcomes that the Business Department anticipates accomplishing during the 2020-2025 grant cycle:

### <u>Year 1</u>

- A physical space/location and resources necessary for the establishment of the Innovation Cafe on campus will be identified and renovated.
- A minimum of two (2) companies will collaborate with the WDEC
- A committee of five (5) faculty and students will review the curriculum's learning outcomes to ensure that students are being prepared to participate in Center activities
- At least three (3) internship opportunities will be implemented and students will complete a minimum of seven (7) research projects
- A minimum of two (2) projects will be completed through the Computer Science Department to expose students to new technologies

### <u>Year 2 -Year 5</u>

- A minimum of six to ten (6-10) companies will collaborate with the WDEC
- At least six-ten (6-10) internship opportunities will be implemented and students will complete a minimum of seven to ten (7-10) research projects
- A minimum of four to ten (4-10) projects will be completed through the Computer Science Department to expose students to new technologies
- Data will be compiled to monitor and forecast economic development and entrepreneurial activity in Philadelphia and the surrounding communities
- A minimum of six (6) entrepreneurs will be served through the data bank, research, publications, and outreach of the Lincoln University Business & Entrepreneurship Department, University Career Services, and similar Lincoln University Departments
- Marketable job skills will be developed and enhanced for at least ten to twenty (10-20) students and entrepreneurs through workforce development and coordination efforts with Rap Snacks Foundation
- A Gaming concentration will be fully developed and offered in the Computer Science Department with at least one (1) additional faculty member
- The Cybersecurity concentration in the Computer Science Department will be fully implemented in the Computer Science Department with at least one (1) additional faculty member

To properly evaluate the success of the WDEC, several classifications of metrics will be implemented to assess the progress of this initiative from its inception through the first five years of operation. These metrics are needed to ensure the objectives of the program are being met, to substantiate the use of institutional and corporate funding, and to provide a basis for future growth of reach and service that the WDEC provides to both Lincoln University students and the surrounding community.

#### Key metrics being assessed are as follows:

- 1. Network and Engagement
- 2. Funding Raised
- 3. Infrastructure
- 4. Number of Incubator Companies
- 5. Employment Generation
- 6. Successful Exits
- 7. Sustainability of the Incubator

We are confident that identifying these metrics and key performance indicators will align our work with strategic objectives. Also, these Identified metrics will enable us to track, monitor, and collect data that ensures our project and operational work is completed on time, within budget and meets quality standards to satisfy customer demands.

For the Computer Science area, this Activity will employ a combination of traditional assessment strategies by using a rubric to grade course assignments. However, since computer science is an area where competencies must be demonstrated, faculty will assess the extent to which students can *demonstrate* the skills and competencies needed to be effective and efficient field.

#### **RELATIONSHIP TO THE UNIVERSITY'S STRATEGIC PLAN**

The overall goal of the Activity is to address the Lincoln University (LU) priority to invest in a way to build a technology-rich teaching and learning environment that will create new learning opportunities at the intersection of business and liberal arts. The Activity is intended to reinforce the existing teaching and learning structure that supports student preparedness for graduate programs and the workforce and supports academic instruction in the division that is heavily dependent on technology, particularly in areas where Black Americans are underrepresented. The WDEC further aligns with LU's Strategic plan by promoting academic innovation through supporting scholarly and creative excellence, investing in entrepreneurs and technology integration and expanding signature academic programs.

STRATEGIC THEME	STRATEGIC PRIORITIES		
DELIVER THE LINCOLN PROMISE	<ul> <li>Ensure every Lincoln Lion Graduates with a Competitive Edge</li> <li>Prepare Students for Life and Career Through Curricular and Co-Curricular Activities</li> </ul>		
PROMOTE ACADEMIC INNOVATION	<ul> <li>Support Scholarly and Creative Excellence</li> <li>Invest in entrepreneurs and Technology Integration</li> <li>Expand Signature Academic Program</li> </ul>		

#### KEY PERSONNEL NEEDED TO ACCOMPLISH PROGRAMMATIC OUTCOMES:

Dr. Sam Williams, an Assistant Professor in the Business & Entrepreneur Department, will serve as the Activity Director. As the Activity Director, he will work closely with Dr. Tiffanie Smith, Chair of the Computer Science Department, to ensure that the implementation strategies are completed, objectives and performance indicators are met and quantifiable outcomes are well documented. In addition to this collaboration, a Program Coordinator, a Faculty Project Director and a minimum of five (5) will assume the responsibilities of training faculty and students to develop innovative research and projects using trending technology.

#### 2. Name of Applicant Institution: 2. Activity #/Title: LINCOLN UNIVERSITY Strengthening The William K. Dadson **Entrepreneurship Center Measurable Objectives Measurable Performance Indicators** 1.0 1.1 A committee of at least five (5) faculty and To ensure that a minimum of ten (10) students will have the opportunity to participate in the students will review the curriculum and the WDEC by preparing them to produce innovative attendant learning outcomes to ensure that products that would not be undertaken through students are being prepared to participate in the innovative projects offered through the the standard classroom requirements during the Center by December 2020. grant period. 1.2 At least two (2) types of equipment (portable and stationary) will be identified and purchased to provide the tools needed for Center production by February 2021. 1.3 At least seven (7) student research projects using Center resources will be completed by August 2021. 1.4 At least three (3) internal partnerships with Title III supported units (Computer Science, Career Services and the Faculty Development Center) will be established to help students with academic support, professional development and counseling resources by January 2020. 2.0 2.1 To strengthen Lincoln University's Business One (1) WDEC Icafe will be installed in Department's relationships with a minimum of Dickey Hall to provide a forum for the two (2) companies by engaging these companies activities of the WDEC by July 15, 2021. in collaborative activities by September 30, 2.2 2021. Two (2) companies will be identified to collaborate with WDEC staff in the execution of innovative products by January 31, 2021. 2.3 External partnerships with industry, community and other institutions will be used

# ACTIVITY OBJECTIVES AND PERFORMANCE INDICATORS

	to secure a minimum of four (4) internship opportunities during the grant year.		
<b>3.0</b> To prepare students majoring in computer science for the new job market by incorporating new technology into the curriculum and completing the development of two (2) new courses in trending technology areas (HCI, Gaming and/or Virtual Reality) by September 2021.	<b>3.1</b> Through the William K. Dadson Entrepreneurship Center, a consultant will be hired to assist in the development of two (2) trending technology areas (HCI, Gaming and/or Virtual Reality) courses by November 2020.		
	<b>3.2</b> Two (2) new trending technology areas (HCI, Gaming and/or Virtual Reality) courses will be offered by the 2021-2022 academic year.		
	<b>3.3</b> A minimum of two (2) partnerships with industry or government will be entered into to expose students to requirements of the job market in trending technology areas (HCI, Gaming and/or Virtual Reality) by May 2021.		
	<b>3.4</b> Industry and government partners will provide at least two (2) forums for students (virtually or on-site) to inform them of marketplace requirements in HCI, Gaming and/or Virtual Reality by May 2021.		
	<b>3.5</b> The computer science laboratory will be enhanced through the purchase of a minimum of one (1) software package focused on Virtual Reality by May 2021.		

# **IMPLEMENTATION STRATEGY/TIMETABLE FORM**

1. Name of Applicant Institution: LINCOLN UNIVERSITY		2. Activity Title: Strengthening The William K. Dadson Entrepreneurship Center				
3. Specific Tasks To Be Completed (IN CHRONOLOGICAL	4. Primary Participants	5. Methodologies Involved	6. Tangible Results	7. Tin From	neline(s) To	
ORDER) Recruit, interview and hire a director to manage WDEC	Program director, Dean Joseph Business department faculty	A job description will be created and advertised, a series of qualified candidates will be interviewed, and a successful candidate will be hired.	A director will be hired.	Aug 17, 2020	Dec 30, 2020	
Purchase software, hardware, furniture and teaching laboratories in the Science Building	WDEC, Program director, Dean of the College of Science	Consult with the mass communication department; visual combinations request quotes from multiple vendors and then order the equipment.	All equipment will be received.	Dec 30, 2020	Feb 30	
Create community and company partnerships	Dean faculty, academic	Meetings with community leaders and companies.	Two more companies involved with WDEC; the community is using WDEC.	March 1, 2020	May 30, 2020	
Two (2) new courses in trending technology areas (HCI, Gaming and/or	CSC faculty,	The new courses will be developed to align with the	Students can enroll in the courses by Spring 2022.	November 2020	September 2021	

Virtual Reality will be developed.	Academic Program Approval Committees	current CSC major curriculum and will go through the appropriate approvals at the University			
Prepare students for the new job market by incorporating new technology and developing a minimum of two (2) external partnerships.	CSC faculty	New technology will be purchased for the Gaming Laboratory to strengthen student performance and to expose students to the requirements job market Industry and government partnerships will be established	Students will be exposed to at least two (2) experts in the Gaming arena.	November 2020	May 2021
Industry and government partners will provide at least two (2) forums for students to inform them of marketplace requirements.	CSC faculty, Program Director	Through discussion sessions, students will be informed as to how to prepare for the computer science field and the competencies they must acquire for employment	Students will be exposed to at least two (2) experts in the Gaming arena.	November 2020	May 2021
Purchase a minimum of one (1) Gaming software package for the laboratory.	Program Director	Faculty will decide on the additional software they need to be effective	Students will have the software to develop Gaming products.	November 2020	May 2021
Train a minimum of two (2) faculty on the use of technology and software.	Vendors Trainers		Two (2) faculty will acquire training to teach	December 2020	August 2021

		Training will be conducted to train faculty on instructing with new technology Faculty will train students on the usage of the new technology	0		
A minimum of six (6) computer science students' will participate in the <b>Entrepreneurship</b> <b>Center</b> activities and be exposed to experts who can help strengthen their research and presentation skills.	Faculty	Students will conduct research for class projects and will prepare to participate in a Hackathon.	students will participate	January 2021	August 2021

# ACTIVITY III

### **ACTIVITY DIRECTOR'S**

### **CURRICULUM VITAE SUMMARY**

# SAM WILLIAMS

2004 West Union Street · Chester, PA 19013 SamLWilliams7@gmail.com · 267.640.4144

#### **EDUCATION**

#### PhD Business

Capella University, Minneapolis, MN 2015 Dissertation Title: 'The Business Aspect of the Hip Hop Culture'

#### **MSIS, Enterprise Resource Planning**

2008

Strayer University, Springfield, PA Thesis Title: 'Implementing ERP Systems: Need for Business and Technology Integration'

#### **MBA**, Marketing

2006 Strayer University, Springfield, PA Thesis Title: 'Wolof Market Women of Senegal: African Women in National Development'

#### **BBA**, Marketing

2002 Temple University, Fox School of Business, Philadelphia, PA

#### HIGHER EDUCATION EXPERIENCE

#### **Assistant Professor**

August 2018-Present

Lincoln University, Lincoln PA

**Teach undergraduate courses:** Principle of Marketing, Principle of Management, Business Communications Senior Seminar, Management, Organizational Behavior.

- Prepares meaningful classroom experiences that include a variety of pedagogical strategies, including lectures, discussion, tests and exams.
- Compiles, administers, and grades examinations.
- Participates in Assessment activities by submitting data on student learning outcomes in a timely fashion.
- Faculty Advisor for the Business Club.

#### **Adjunct Professor**

August 2017-Present Lincoln University, Lincoln PA

**Teach undergraduate courses:** Principle of Marketing, Principle of Management, Business Communications.

- Prepares meaningful classroom experiences that include a variety of pedagogical strategies, including lectures, discussion, tests and exams.
- Compiles, administers, and grades examinations.
- Participates in Assessment activities by submitting data of student learning outcomes in a timely fashion.

#### **Adjunct Professor**

2011-January 2016

Cheyney University, Cheyney, PA

**Courses taught:** Marketing, Marketing In Urban Areas, Marketing Management, Principles Of Salesmanship, Sales Management, Business Communications, Buyer Behavior,

Entrepreneurship, Organization Theory & Design, Retail Management, Personnel Management, and Advertising.

- Member of the Business Department.
- Advise students.
- Qualified to teach information system classes and management classes.
- Teach individual instruction classes.
- Volunteer in the Enrollment Department.
- Certified to teach online class.

#### **Admissions Manager**

December 2006 - June 2012 Strayer University, Springfield, PA

- Exceeded enrollment goal by 4 percent.
- Managed admissions staff toward meeting established new student enrollment and conversion objectives.
- Actively participated in all aspects of the new student recruitment and enrollment process to include assisting Admissions Officers as well as personally handling recruitment/enrollment of students.
- Ensured all new student inquiries and applications are accurately entered into the University's Student Information System in a timely manner.
- Oversaw the hiring and training of new Admissions Officers and administrative support staff.
- Ensured University admissions standards and ethical expectations are communicated to new employees and upheld at all times.
- Partnered with other departments as necessary to finalize the enrollment process, including the Business Office, Academics, and the University Registrar's Office.
- Fostered an environment of cooperation and teamwork among Admissions Officers and all campus departments.

August

- Enforced all policies relating to the acceptance and subsequent registration process of new students entering the University.
- Adhered to all University policies and procedures and federal, state, and accrediting agency rules with respect to recruitment.
- Work with the campus leadership team to schedule new student orientation and online orientation sessions as well as implement other campus directives.

### ENTREPRENEURIAL EXPERIENCE

### Founder/Chief Executive Officer

June 2015-Present

Bestcore Arts & Technology Innovation Inc, Chester, PA

Bestcore Arts and Technology Innovation INC., is a not-for-profit 501(c)(3) organization that provides unique and meaningful arts and technology innovation programming for the community of Chester, Pennsylvania and surrounding areas. Bestscore offers dynamic and progressive programs focused on entrepreneurship, music business, music production, application building and coding, robotics and enterprise resource planning.

- Oversee employees and volunteers.
- Created strategy, Vision & Mission Planning.
- Marketing Leadership.
- Finance, Budgeting & Cost Management.
- Team Building & Performance.
- Human Resource Management.

### Founder/Chief Executive Officer

### September 1997-Present

Bestcore Entertainment LLC, Chester, PA

Bestcore Entertainment LLC. provides our clients with entrepreneurship strategies, strategic leadership, marketing, branding, public relations, advertising, creative development, artist development, song writing, management, music production, distribution, intellectual property, and innovation. Bestcore Entertainment LLC is the parent company of Bestcore Radio.

- Responsible for entire process of producing music.
- Formulated and monitored the budget for each department and provide reports.
- Manage budget and oversee supply and equipment requests and procurement.
- Supervise, employees and volunteers.
- Oversee aspects of a record label (ROI, A&R, contracts, management, publishing, production, manufacture, marketing/promotion, distribution, copyright, touring).
- Independently sold over 350,000 albums.
- Functioned as the main liaison between major artist and record labels; represent major artists at meetings and conferences.

# ACTIVITY III

# CHAIR, COMPUTER SCIENCE'S

# **CURRICULUM VITAE SUMMARY**

### **TIFFANIE SMITH**

### Lincoln University | Nelson Science Bldg. 234

#### http://www.tiffaniersmith.com tiffaniesmith527@gmail.com

#### UNIVERSITY OF FLORIDA | PH.D. IN HUMAN CENTERED COMPUTING

Dec. 2019 | Gainesville, FL | Cum. GPA: 3.96

- Dissertation: Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebra Practice
- Advisor: Juan E. Gilbert, Ph.D.

**NORTH CAROLINA A&T STATE UNIVERSITY** | BS IN COMPUTER ENGINEERING May 2013 | Greensboro, NC | GPA: 4.0

#### **RESEARCH INTERESTS**

Educational Technologies | Broadening Minority Participation in STEM | STEM Education | Human Centered Computing | Culturally Relevant Technologies | Gestural Interfaces | User Experience

#### **APPOINTMENTS**

LINCOLN UNIVERSITY |ASSISTANT PROFESSOR OF COMPUTER SCIENCE Aug 2019 | Oxford, PA

#### HUMAN EXPERIENCE RESEARCH LAB | GRADUATE RESEARCH ASSISTANT

Aug 2014 – Dec 2019 | Gainesville, FL | Advisor: Dr. Juan E. Gilbert

[Primary Researcher] Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebra Practice

About: Makin' Math Move in a Kinect-based educational tool designed to help students, in particular African American, practice pre-algebraic concepts via gestural input. Duties:

- Design and develop the system, including gestural database and Unity based interface
- Perform user studies, including a gesture elicitation study, write papers and analyze data.

#### [Team Member] Prime III

About: Prime III is a universal voting machine which features a multimodal design allowing users of all abilities to vote. Users can vote via speech, touch or haptic switch input. Duties:

- Conducted demo elections for various organizations
- Conducted research on usability and effectiveness of the system

[Team Member] AADMLSS V2

About: The African American Distributed Multiple Learning Styles System v2 adapted components from the original system which utilized rap lyrics and Black cultural cues to help students solve Algebra problem. The second iteration added a guided practice section and interactive lesson. Duties:

- Designed interface for application screens using HTML5 and CSS
- Conducted focus group and user studies to influence the system's design and evaluate the system, respectively

#### HUMAN CENTERED COMPUTING LAB | GRADUATE RESEARCH ASSISTANT

Aug 2013 – July 2014 | Clemson, SC | Advisor: Dr. Juan E. Gilbert

[Team Member] CableLabs

About: The CableLabs project aimed to develop a system that controlled a smart television via gestures.

Duties:

- Conducted user studies via the Wizard of OZ technique to collect gesture for 20 television functions
- Coded and classified gestures to determine to most commonly used gestures
- Programmed the Kinect for Windows sensor to recognize gestures
- Led team in charge of designing the visual interface

#### NAVMAR APPLIED SCIENCES CORPORATION | DOD STEM INTERN

June 2013 – Aug 2013 | Eglin AFB, FL

# NORTH CAROLINA A&T STATE UNIVERSITY | NC- LSAMP UNDERGRADUATE RESEARCHER

Jan 2012 – May 2013 | Greensboro, NC | Advisor: Dr. Christopher C. Doss

**GEORGIA INSTITUTE OF TECHNOLOGY** | SURE UNDERGRADUATE RESEARCHER Jun 2012 – Aug 2012 | Atlanta, GA | Advisor: Dr. Ayanna M. Howard

#### NAVAL UNDERSEA WARFARE CENTER- NEWPORT DIVISION | INTERN

May 2011 – July 2011 | Newport, RI

#### **SKILLS**

#### TECHNICAL

Java • C# • C++ • Kinect SDK Android Development • App Inventor Familiar: PHP•JavaScript•MySQL•Unity•HTML&CSS•Python

#### **TEACHING**

#### LINCOLN UNIVERSITY ASSISTANT PROFESSOR

### **Courses:**

Interviews/Focus Groups • Usability Testing • Participatory Design • Personas and Scenarios • Storyboarding • Wireframes (Balsamiq & Invision)

- Affinity Diagramming Low & High Fidelity Prototyping
  - Fall 2020: Computer Networks, Intro to Computer Security, & Intro to Programming
  - Spring 2020: Computer Applications, Computer Architecture, Computer Organization and Assembly
  - Fall 2019: Computer Applications & Intro to Programming

#### **UNIVERSITY OF FLORIDA** INSTRUCTOR

• Spring 2017: Computer Programming Using Java (Non CS Majors)

#### **CLEMSON UNIVERSITY** TEACHING ASSISTANT

• Fall 2013-Spring 2014: Computer Science 101 & Intro to Computer Science

#### PUBLICATIONS

- Smith, T.R., Gilbert, J.E. (2019). Did Math Make Me Move? The Design and Initial Evaluation of a Culturally Appropriate Gestural Educational Technology. Proceedings of the 2019 American Society for Engineering Education Annual Conference and Exposition (Minorities in Engineering Division), Tampa, FL.
- Waisome, J.A.M., McMullen, K., Smith, T.R., Smarr, S.A, Gilbert, J.E. (2019). Developing Career Self-Efficacy of Researchers in Human-Centered Computing through Scholarship Support. Proceedings of the 2019 American Society for Engineering Education Annual Conference and Exposition (Minorities in Engineering Division), Tampa, FL.
- Smith, T.R. and Gilbert, J.E. 2018. Dancing to design: a gesture elicitation study. In Proceedings of the 17th ACM Conference on Interaction Design and Children (IDC '18). ACM, New York, NY, USA, 638-643. DOI: https://doi.org/10.1145/3202185.3210790
- Jones, J. N., Smith, T. R., Mack, N. A., Sherman, I., Gilbert, J. E. ©(2017). Engagement in Practice: The Development of and Lessons Learned from a Community Focused App Development Course. American Society for Engineering Education. ASEE (Annual Conference) Proceedings, (Columbus, Ohio)
- Mack, N., Smith, T., Jones, J., Gilbert, J. (2017). Updated AADMLSS: Design and Evaluation of a Culturally Relevant Algebra Application. In Proceedings of The American Society for EngineeringEducationZone2 Conference. San Juan, Puerto Rico