INDIANA COMMISSION *for* HIGHER EDUCATION

AGENDA

Thursday, August 8, 2019

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Indianapolis, IN 46204-4206
Tele: 317-464-4400 | Fax: 317-464-4410
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INDIANA COMMISSION *for* HIGHER EDUCATION

AUGUST COMMISSION MEETING
AGENDA

Wednesday, August 7, 2019

INDIANA UNIVERSITY NORTHWEST
Arts and Sciences Building
3400 Broadway
Gary, IN 46408

CAMPUS TOUR
4:30 P.M. – 5:30 P.M. CT
Arts and Sciences Building
Tour led by Chancellor William Lowe
Begins outside Room 1010

RECEPTION & DINNER
5:45 P.M. – 7:30 P.M. CT
Arts and Sciences Building
Room 2010, Theater Lobby

HOTEL ACCOMMODATIONS
Fairfield Inn & Suites by Marriott Merrillville
8275 Georgia Street
Merrillville, IN 46410

Thursday, August 8, 2019

COMMISSION MEETING
Indiana University Northwest
Arts and Sciences Building
3400 Broadway
Gary, IN 46408

COMMISSION MEMBER BREAKFAST
8:00 A.M. – 9:00 A.M. CT
Arts and Sciences Building
Room 1024

Guest
Chancellor William Lowe

STAFF BREAKFAST
8:00 A.M. – 9:00 A.M. CT
Arts and Sciences Building
Room 2010, Theater Lobby

WORKING SESSION
9:00 A.M. – 11:30 A.M. CT
Arts and Sciences Building
Room 1010

CALL IN INFORMATION:
DIAL: 1 (605) 475-4700
PIN: 230295#

WORKING SESSION TOPICS

- Welcome Dr. Trent Engbers
- Mission Differentiation in the 21st Century
- College Equity Report Preview
- Summer Student Outreach
- Strategic Plan Update
- Committee Report Outs

COMMISSION MEMBER LUNCH
11:30 A.M. – 1:00 P.M. CT
Arts and Sciences Building
Room 1024

STAFF LUNCH
11:45 A.M. – 1:00 P.M. CT
Arts and Sciences Building
Room 2010, Theatre Lobby

BUSINESS MEETING
1:00 P.M. – 3:00 P.M. CT
Arts and Sciences Building
Room 1010

CALL IN INFORMATION:
DIAL: 1 (605) 475-4700
PIN: 230295#

I. Call to Order – 1:00 P.M. ***(Eastern)***
Roll Call of Members and Determination of Quorum
Chair's Remark
Officer Slate for 2019-2020
Commissioner's Report
Consideration of the Minutes of the June 13, 2019 Commission Meeting 1

II. Public Square
A. Workforce Alignment in Northwest Indiana 7
1. Linda Woloshansky, President & CEO, Center of Workforce Innovations
2. Heather Ennis, President & CEO, Northwest Indiana Forum

III. Business Items
A. Academic Degree Programs for Full Discussion
1. Doctor of Philosophy in Musculoskeletal Health (IU) to be offered at Indiana 11
University Purdue University Indianapolis
B. Academic Degree Programs for Expedited Action 43
1. Master of Arts in Curatorship to be offered by Indiana University Bloomington
2. Master of Science in Genome, Cell, and Developmental Biology to be offered by Indiana University Bloomington
3. Master of Science in Neuroscience to be offered by Indiana University Bloomington
4. Bachelor of Science in Data Science to be offered by Indiana University Bloomington
5. Master of Science in Criminal Justice and Public Safety to be offered by Indiana University Northwest

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The next meeting of the Commission will be on **September 12, 2019, in Jasper, Indiana.**

State of Indiana
Commission for Higher Education

Minutes of Meeting

Thursday, June 13, 2019

I. CALL TO ORDER

The Commission for Higher Education met in regular session starting at 1:00 p.m. at Purdue Fort Wayne, 1528 East California Road, Fort Wayne, IN 46825 with Chris LaMothe presiding.

ROLL CALL OF MEMBERS AND DETERMINATION OF A QUORUM

Members Present: Mike Alley, Dennis Bland, Jon Costas, Jud Fisher, Coleen Gabhart, Al Hubbard, Chris LaMothe, Chris Murphy, Kathy Parkison, Dan Peterson, Beverley Pitts and Alfonso Vidal
Members Absent: Lisa Hershman and John Popp

CHAIR'S REPORT

On behalf of the Commission, I would like to thank Chancellor Elsenbaumer and the Purdue Fort Wayne staff for your hospitality last evening and hosting our meeting today.

As Kathy Parkison's term on the Commission comes to a close, I want to make a few comments about her service to the Commission. Kathy has been a tremendous contributor to the Commission, serving on two committees, planning an outstanding Faculty Leadership Conference among many other contributions.

We have a resolution honoring Kathy for her service. I would like to ask Beverley Pitts to read it.

R-19-04.1 **RESOLVED:** That the Commission for Higher Education hereby approve Resolution honoring Kathy Parkison (Motion – Murphy, second – Hubbard, unanimously approved)

The new faculty Commission member has yet to be appointed by the Governor's office but we hope will be appointed to begin his/her term in July. Additionally, Officers for the positions of Chair, Vice Chair and Secretary of the Commission are voted in each year in August. I have established a Nominating Committee of Commission members to propose a Slate of Officers at our August meeting.

COMMISSIONER'S REPORT

Commissioner Lubbers began her report stating we used to think that the summer months were the down time for educational organizations. After all, the students go home and commencements are behind us. But that's clearly not the case anymore as more campuses are offering year round programs and more students don't fit into that 18-22 age group.

Students are using the summer months to make up classes, get ahead in credits, meet financial obligations and take courses closer to home or online.

At the Commission, summer is the season of the higher education convenings, and we're already putting together our legislative agenda for the 2020 session. In addition, interim study committees are scheduling meetings, and CHE is called out in legislation to be a part of many of them. That's good news because that means we will be at the table to influence the outcome on issues such as K-12 accountability, dual credit and teacher preparation programs. Members of the CHE staff will be presenting at national and state meetings, including SHEEO, Midwestern Higher Education Compact (Ken Sauer is the chair of MHEC this year), Indiana Black Expo, Conexus and, of course, Lumina and Strada events.

This is also a good time to reflect on where we've been and where we're going. That's what we're doing as we develop a new state higher education strategic plan. Many of our partner colleges and universities are engaging in strategic planning, too, and in exploring new ways to serve students. Recently, there was an op-ed that appeared in papers throughout the state co-written by Ivy Tech's president Sue Ellspermann and Independent Colleges of Indiana President David Wantz. It focused on several initiatives, some of which are already underway and some in the planning stages.

I wanted to highlight a few of these because they really address the Commission's call for more collaboration between institutions. Marian University and Ivy Tech Central Indiana have launched an articulation agreement that streamlines credit transfer. A program has been launched that allows students to be simultaneously accepted at both the University of Evansville and Ivy Tech Evansville. Ivy Tech Columbus houses a full-time admissions counselor from Trine University. Students at Ivy Tech Valparaiso can complete a pre-engineering program that qualifies them for automatic acceptance into Valparaiso's engineering program. Ivy Tech Warsaw and Grace College are launching a program which will enable Grace College students to earn a technical certificate as part of a Grace program.

These partnerships address the realities of the way students learn and the need to combine both technical skills and liberal arts/critical thinking skills. It also shows in tangible ways that collaboration is being embraced between public and private schools as well as between our public institutions. This is good news for students and the state.

Speaking of good news. You will recall the work we did with Roadtrip Nation – producing an Indiana version which highlighted innovative career pathways by following three students who traveled the state in a RV to interview professionals in growing/changing industries. We learned that Roadtrip Nation: State of Change has been nominated for a Regional Emmy Award in the category Best Documentary: Topical, by the national Academy of Television Arts & Sciences Lower Great Lakes Chapter.

A couple other items: Last month, Coleen Gabhart participated in the Institute for Higher Education policy's summit in Washington, D.C. as a representative of Ivy Tech. The summit featured perspectives from the students who struggle with the cost of college and make sacrifices to complete their education. The IHEP report is called "The Cost of Opportunity: Student Stories of College Affordability." Coleen and other students spoke to a group of

Congressional staffers, policy organizations, national funders and college leadership. Thanks, Coleen, for your good work.

Finally, I wanted to introduce you to Charlee Beasor who is our new Director of Communications – taking Kate Stuard's position. Kate is taking time to write full time a series of books aimed at early teens, a project that she's been working on for nearly ten years. We are fortunate to have Charlee joining us. IN her most recent position, she has been the Communications and PR Manger for the Indiana Chamber of Commerce. She has written frequently about CHE's work and knows the education/workforce space very well. We look forward to having Charlee as a member of the CHE team.

CONSIDERATION OF THE MINUTES OF THE MARCH, 2019 COMMISSION MEETING

R-19-04.2 **RESOLVED:** That the Commission for Higher Education hereby approves the Minutes of the March, 2019 regular meeting. (Motion – Murphy, second – Hubbard, unanimously approved)

II. PUBLIC SQUARE

A. Teacher Preparation in the 21st Century

1. Scott Bogan, Director of Higher Education and Educator Preparation Programs, Indiana Department of Education
2. Kenith C. Britt, Ph.D., Senior Vice President and Dean, Fred S. Klipsch Educators College, Marian University
3. Jesse Mendez, Ph.D., Dean and Professor, Indiana University School of Education at IUPUI

As the Commission continues to engage in conversations about helping student navigate through college and careers, it will have the opportunity to discuss issues of teacher preparation with Scott Bogan, Director of Higher Education and Ed. Prep. Programs at the Indiana Department of Education, Dr. Kenith Britt, Senior VP and Dean, Fred S. Klipsch Educators College at Marian University, and Dr. Jesse Mendez, Dean of the Indiana University School of Education at IUPUI.

Zach Smith moderated this session.

III. Business Items

A. Commission for Higher Education Fiscal Year 2020 Spending Plan

R-19-04.3 **RESOLVED:** That the Commission for Higher Education hereby approves the Commission for Higher Education Fiscal Year 2020 Spending Plan in accordance with the background information provided in this agenda item. (Motion – Parkison, second – Fisher, unanimously approved)

B. Policies on the Regional Campuses and Purdue University Fort Wayne

1. Policy on Regional Campus Roles and Missions
2. Policy on Purdue University Fort Wayne

R-19-04.4 **RESOLVED:** That the Commission for Higher Education hereby approves the Policies on the Regional Campuses and Purdue University Fort Wayne in accordance with the background information provided in this agenda item. (Motion – Fisher, second – Alley, unanimously approved)

C. Bilateral Reciprocity Agreement: Indiana - Ohio

R-19-04.5 **RESOLVED:** That the Commission for Higher Education hereby approves the Bilateral Reciprocity Agreement: Indiana – Ohio, in accordance with the background information provided in this agenda item. (Motion – Parkison, second – Alley, unanimously approved)

D. Academic Degree Programs for Expedited Action

1. Bachelor of Science in Atmospheric Science to be offered by Indiana University Bloomington
2. Master of Science in Speech-Language Pathology to be offered by Indiana University South Bend
3. Doctor of Philosophy in Mechanical Engineering to be offered by Purdue University at Indiana University Purdue University Indianapolis
4. Bachelor of Science in Analytics to be offered by Purdue University Global

R-19-04.6 **RESOLVED:** That the Commission for Higher Education hereby approves the following academic degree programs, in accordance with the background information provided in this agenda item. (Motion – Parkison, second – Fisher, unanimously approved)

III. INFORMATION ITEMS

A. Academic Degree Programs Awaiting Action

B. Academic Degree Actions Taken By Staff

C. Media Coverage

D. Schedule of Upcoming Meetings of the Commission

IV. OLD BUSINESS
NEW BUSINESS

There was none.

V. ADJOURNMENT

The meeting was adjourned at 2:42 P.M.

_____
Chris LaMothe, Chair

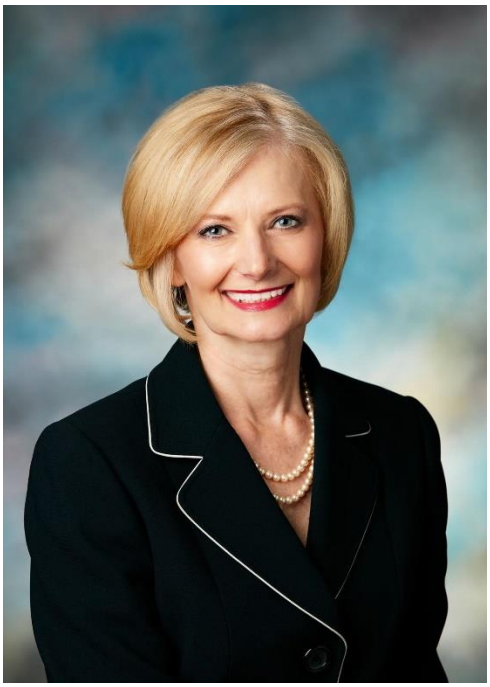
_____
Al Hubbard, Secretary

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

PUBLIC SQUARE:	**Workforce Alignment in Northwest Indiana**
Background	As the Commission continues to engage in conversations about workforce alignment, it will have the opportunity to discuss current efforts underway in northwest Indiana. The Commission will be joined by local leaders Linda Woloshansky, President & CEO of the Center of Workforce Innovations, and Heather Ennis, President & CEO of the Northwest Indiana Forum.
Supporting Documents	Linda Woloshansky Bio Heather Ennis Bio

Linda Woloshansky

President & CEO
Center of Workforce Innovations



The founding President of CWI has 35 years of experience as a CEO of three nonprofit companies. Her career has taken her from the private sector, to school systems, the state of Indiana, and non-profits in many different capacities. Her leadership has resulted in the recognition of several national award winning programs and systems she has led and personal recognition of her work.

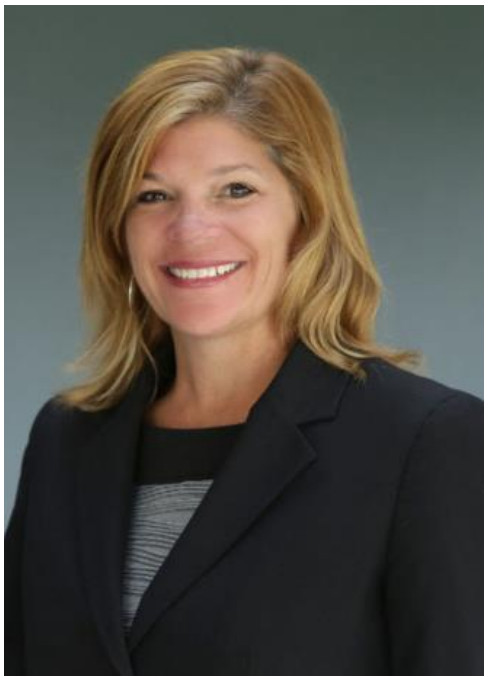
Linda has served as a consultant on workforce board development throughout the country, has been frequently published, and developed a workforce board assessment manual in the early days of the National Association of Workforce Boards.

She has served as Chair of the Great Lakes Employments and Training Association, Vice Chair to the employment and training board of National Association of Counties, and treasurer of Midwest Urban Strategies, as well as other board leadership roles in the state and region.

She is a graduate of Indiana University, certified Six Hats trainer, Certified Training Consultant from Ball State University, and was a School to Work Consultant for the Department of Labor. Linda has also taught at state universities and economic development institutes throughout the country.

Heather Ennis

President & CEO
Northwest Indiana Forum



Heather Ennis is President and CEO of the Northwest Indiana Forum, a privately held nonprofit organization focused on creating economic development opportunities for the seven-county region. With more than 125 members, the Forum works to create a positive business climate promoting investment and quality job creation and retention in harmony with the environment and critical components of a sustainable regional economy. Funded by membership contributions and grants, Forum membership translates into a direct investment in the region's future.

Previously as Executive Director of the Duneland Chamber of Commerce, she led an organization committed to improving the quality of life and breadth of economic opportunity within the five lakefront municipalities of Beverly Shores, Burns Harbor, Chesterton, Dune Acres and Porter.

In addition, Ennis was the President of the Duneland Economic Development Company; a body invested in strengthening the local business environment through business attraction, retention and expansion. More than just a community leader, she served as a catalytic voice for her constituents on a regional level as a member of the Northwest Indiana Forum Economic Development Committee, the Porter County Economic Development Alliance and the Porter County Jobs Cabinet.

Ennis credits her husband and young son as the source of her passion for local community building and regional economic development. After working nationally for several years, she made a firm commitment to raise her family in Northwest Indiana – a region she is doing her part to strengthen for the next generation.

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM A-1: **Doctor of Philosophy in Musculoskeletal Health to be offered by Indiana University at Indiana University Purdue University Indianapolis**

Staff Recommendation That the Commission for Higher Education approve the Doctor of Philosophy in Musculoskeletal Health to be offered by Indiana University at Indiana University Purdue University Indianapolis in accordance with the background discussion in this agenda item and the Program Description.

Background

Review Process. The Academic Affairs and Quality Committee discussed this program at its July 22, 2019 meeting and reacted favorably to the proposal.

Similar Programs in Indiana. In the ***independent*** or private, non-profit sector, no institution offers a doctoral program specifically focused on musculoskeletal health. Marian University does offer a Doctor of Osteopathic Medicine (D.O.), but there are significant differences in disciplinary focus and the proposed program is a research/scholarship doctorate whereas the D.O. is a professional practice doctorate leading to licensure.

In the ***proprietary*** or private, for-profit sector, no institution offers a doctoral program specifically focused on musculoskeletal health.

Within the ***public*** sector, no institution offers a doctoral program specifically focused on musculoskeletal health.

Related programs at IUPUI. IUPUI offers the Doctor of Medicine, which had a headcount enrollment of 1,432 students and had 312 graduates in FY2018, as well as an array of research/scholarship doctoral degrees in the basic medical sciences and related fields.

General Background. The proposed 90-credit hour Ph.D. in Musculoskeletal Health would be offered through the School of Medicine's Indiana Center for Musculoskeletal Health (ICMH), which was established in 2016, although it is an interdisciplinary program that would draw upon faculty from three other IUPUI Schools: Health and Human Services, Science, and Engineering

and Technology. Almost all students would be admitted through the Indiana BioMedical Gateway (IBMG) program, a shared first-year experience common to all students at IUPUI pursuing doctoral degrees in the basic medical sciences. A small number of program enrollees would be joint M.D./Ph.D. students.

The ICMH has more than 100 member researchers, who have generated over $75 million in external funding, and is hosting an international conference in Indianapolis this August that is supported by industry and the National Institutes of Health; it also has strong ties to Indiana's $48 billion orthopedic medical device industry and is partnering with the Department of Orthopaedic Surgery to support that Department's goal of becoming one of the top 10% Orthopaedic Surgery departments in the U.S., with a special emphasis on Sports Medicine.

Supporting Document

Program Description – Indiana University Purdue University Indianapolis Ph.D. in Musculoskeletal Health (IU)

Program Description

PhD Program in Musculoskeletal Health Sciences to be offered by Indiana University School of Medicine in Indianapolis

1. Characteristics of the Program

a. Campus Offering Program: Indiana University-Purdue University Indianapolis (IUPUI)

b. Scope of Delivery: Indianapolis Campus

c. Mode of Delivery: Classroom/Laboratory Research

d. Other Delivery Aspects: Basic science and clinical laboratory research

e. Academic Unit Offering Program: Indiana University School of Medicine, Indiana Center for Musculoskeletal Health

2. Rationale for the Program

a. Institutional Rationale

Over the past 30 years, the Indianapolis campus has recruited and retained a significant number of outstanding faculty engaged in biomedical research focused on musculoskeletal health. This interdisciplinary group of nationally and internationally recognized scientists prompted the IU School of Medicine (IUSM) to establish the Indiana Center for Musculoskeletal Health (ICMH) in 2016 with a substantial commitment of resources. https://medicine.iu.edu/research/centers-institutes/musculoskeletal-health/

This new doctoral program is proposed to further leverage this institutional strength in bone, joint, and muscle biomedical research by creating a valuable degree option that functions as an effective recruitment tool to attract the most competitive doctoral degree applicants with interests in this growing area of biomedical research. The opportunity to earn a PhD degree in Musculoskeletal Health Sciences would also more accurately reflect the type of training and expertise that a student has going forward in their careers. The strong research programs and commitment to graduate education of faculty members in the ICMH should prepare doctoral students with the training to be outstanding scientists prepared to excel at careers in academic, clinical and industrial biomedical research.

The ICMH, under the directorship of Dr. Lynda Bonewald, will serve as the academic unit offering the degree program. This proposed program will be offered on the IUPUI campus and will be targeted primarily to doctoral students that enter graduate school through the IUSM's Indiana BioMedical Gateway (IBMG) program. https://medicine.iu.edu/education/graduate-degrees/phd/

We anticipate that applicants who meet or exceed the standards for admission to the IBMG program will have the preparation, experience, personal qualifications and academic accomplishments consistent with the preparation needed to successfully complete the requirements of the Musculoskeletal Health Sciences degree.

Establishing this new doctoral degree will be consistent with the mission of the IU School of Medicine which includes training the next generation of biomedical research scientists. It is also consistent with the IU School of Medicine Strategic Plan, which lists Musculoskeletal Health as one of the four primary focus areas (along with Cancer, Cardiovascular Disease, and Neuroscience). Training will be interdisciplinary and include opportunities for basic science, clinical and translational research projects through the diverse research programs of the ICMH faculty. The degree will require 30 hours of coursework credit, the majority of which will be in the form of didactic classroom lectures and research seminars. The remaining credits (90 total credits) will be research credits and will be supervised by a Graduate Faculty mentor and a research committee selected by the student and their faculty mentor. Although the number of students admitted to the IBMG program since its inception in 2007 has varied a bit, currently the program seeks to admit between 35-45 students each year. We anticipate approximately 3-5 students/year will choose to enter this new Musculoskeletal Health Science program. With approximately 90 research faculty affiliated with the ICMH, including faculty in the Schools of Medicine, Science, Engineering and Technology, Health and Human Sciences, and several Purdue faculty particularly active in training doctoral students in areas of musculoskeletal health, this degree program will clearly have the infrastructure to support the program. We estimate that over half of the ICMH faculty currently have sufficient external grant funding to support one or more new doctoral student in the coming years. In

addition, the ICMH currently is supported by an NIH T32 training grant (Comprehensive Musculoskeletal Training Program; David Burr and Alexander Robling, co-PIs) that supports 3 pre-doctoral students at any given time.

Currently, IBMG students typically pursue the doctoral degree offered by the basic science department in which their mentor holds a primary or secondary appointment. Some students pursue a multidisciplinary Medical Neurosciences doctoral degree. This new Musculoskeletal Health Sciences degree will, much like the Medical Neurosciences program, offer a novel interdisciplinary opportunity for students to conduct doctoral research important to musculoskeletal health. These basic science, clinical, and translational research opportunities may frequently involve a student training directly under the primary supervision of a physician scientist in the ICMH who is also a member of the IU Graduate Faculty, or as part of ongoing collaboration between scientists focused on basic science topics conducted in collaboration with clinician scientists.

The proposed program is designed to build upon the strengths of the Indiana Center for Musculoskeletal Health which was formally established in the IU School of Medicine in 2016. Although the center has grown since 2016 to include approximately 90 members with over $76 million in grant support as of September 2018, the Indianapolis campus has, under the leadership of faculty including Drs. David Burr, Michael Econs, Conrad Johnston, and Stephen Trippel, among others, for several decades been recognized nationally and internationally for its institutional strength in musculoskeletal research. We believe the ICMH can become a destination program for students seeking a doctoral degree in the fields of muscle, bone and joint health. We consider it vital to the growth and development of the ICMH to offer a degree that reflects our strengths in basic, clinical and translational research.

The proposed degree will be administered by the ICMH in cooperation with the IUSM Graduate Division's IBMG program. However this will also be an interdisciplinary program involving ICMH faculty from several schools including other departments within the IU School of Medicine, the School of Health and Human Sciences, the School of Science and the School of Engineering and Technology on the IUPUI campus (especially the Biomedical Engineering

program). The ICMH Education Committee, consisting of Center members from various departments, and an ICMH graduate program director will oversee the degree program.

The Musculoskeletal Health Sciences PhD degree will be awarded by the IU Graduate School and all members of the ICMH who are members of the Graduate Faculty will be eligible to serve as the student's primary mentor (i.e., chair the dissertation committee). The primary mechanism for entrance into the program will be through application and admission to the IU Graduate School using the existing infrastructure of the IBMG program. Under this program, the IUSM Graduate Division provides stipend, tuition and health insurance during the first year of study. During the first semester of year 1, students complete a group of "core" courses covering basic principles of cell biology, biochemistry, genetics and molecular biology. Students planning to pursue a PhD degree in Musculoskeletal Health Sciences will also complete three laboratory research rotations with ICMH faculty during year 1. During the second semester, students begin taking required courses in Bone Biology, Cell Biology of the Neuromuscular System, research ethics, and statistics. Additional courses totaling 30 coursework credits will be completed from a list of approved electives designed to be completed within the first two years of the program. Through their choice of electives, students will be able to focus on various areas of musculoskeletal sciences including biomedical engineering, bioinformatics, whole animal bone biology, mechanobiology or cell and molecular biology. Students will declare and complete the coursework for a 12 credit minor approved by the IU Graduate School. A minimum of 90 total coursework and research credits will be required for completion of the degree. Our goal is that students entering graduate school through the IBMG program in the fall of 2019 will be eligible to choose the Musculoskeletal Health Sciences PhD program by the time they declare their degree choice in spring 2020.

Current doctoral student training by ICMH faculty

As of summer 2018 there are currently 32 PhD students working with faculty mentors who are also members of the ICMH. Degree programs being pursued by students working with ICMH faculty include department-based programs within the IU School of Medicine IBMG program (12), the Purdue College of Health and Human Sciences (11), Veterinary Medicine (6),

IU School of Engineering and Technology (2), and IU School of Health and Human Sciences (1). Our faculty are also mentoring an additional 38 students working toward their MS degree, demonstrating a commitment by ICMH faculty to graduate education.

Coursework – a minimum of 30 hours of coursework credits will be required, including the following required "core" courses:

G715 Biomedical Science I 2 cr
G716 Biomedical Science II 2 cr
G717 Biomedical Science III 2 cr
G819 Basic Bone Biology 3 cr
G801 Cell Biology of the Neuromusculoskeletal System - 3 cr
G655 Research Communication Seminar - 1 cr
G718 Research rotations - (3 rotations x 2 cr) = 6 cr
G505 Ethics - 1 cr
G855 Experimental Biostatistics - 1 cr

Electives - 9 cr - choose from the following list of courses; additional existing courses are likely to be added to this list to allow for completion of a minor as determined by the ICMH Education Committee

G749 Introduction to Structural Biology (1 cr)
G725 Gene Therapy (1 cr)
G848 Bioinformatics, Genomics, Proteomics and Systems Biology (2 cr)
G817 Molecular Basis of Cell Structure and Function (2 cr)
G727 Animal Models of Human Disease (1 cr)
D501 Human Gross Anatomy (5 cr)
D502 Basic Histology (4 cr)
D851 Histology (4 cr)
G737 Introduction to Histology (1 cr)
G734 Advanced Molecular Imaging (1 cr)
G720 Stem Cell Biology (2 cr)
G747 Principles of Pharmacology (1 cr)
F503 Human Physiology (5 cr)

Additional Institutional Rationale Detail: links to the:
IUSM https://medicine.iu.edu/about/strategic-plan/ and
ICMH https://medicine.iu.edu/research/centers-institutes/musculoskeletal-health/ strategic plans

b. State Rationale

This new doctoral degree program aligns well with the priorities and goals of the Indiana Commission for Higher Education's *Reaching Higher, Achieving More* agenda developed in 2012. It is a student-centered degree that provides an opportunity for those that have earned a Bachelor's degree to pursue a doctoral degree in an important area of biomedical healthcare. Demographic facts in Indiana and throughout the United States indicate that our aging population will experience an increased need for care and treatment of musculoskeletal diseases known to be more prevalent in older people. The National Osteoporosis Foundation (www.nor.org) notes that approximately 10 million Americans have osteoporosis and another 44 million have low bone density, placing them at increased risk. Further, half of all adults age 50 and older are at risk of breaking a bone and one in two women and one in four men will suffer a fracture in their lifetime due to osteoporosis. For women, the risk of a fracture is greater than that of heart attack, stroke and breast cancer combined. Osteoporosis-related bone fractures cost families and the healthcare system approximately $19 billion each year, and the cost is estimated to increase to over $25 billion by 2025. Fractures are not just an expensive annoyance. Twenty four percent of hip fracture patients age 50 and over die in the year following the fracture. Osteoporosis is also not the only important musculoskeletal disease that is being addressed by researchers at the ICMH. Osteoarthritis (OA), the most common type of arthritis, affects more than 30 million adults in the United States. Osteoarthritis has a profound economic, personal, and societal impact in the United States. In 2013, the total national arthritis-attributable medical care costs and earnings losses among adults with arthritis were $303.5 billion or 1% of the 2013 US Gross Domestic Product (GDP) (https://www.cdc.gov/arthritis/data_statistics/cost.htm). ICMH researcher are also working to address the connection between other systemic diseases such as diabetes, kidney disease and cancer in recognition of the fact that musculoskeletal disease impacts other serious health conditions.

Indiana is also widely recognized for its important role in the $48 billion orthopedic medical device industry (https://neindiana.com/doing-business-here/target-industries/medical-

devices/), having been dubbed the "Orthopedic capital of the world" by industry leaders. Indiana companies including Zimmer Biomet, DePuy Synthes, Medtronic, and others are responsible for nearly 40% of the worldwide orthopedic device market. This industry, along with pharmaceutical giant Eli Lilly will remain an important employer of in medical devices, equipment, supplies and pharmaceuticals for the foreseeable future. One of their few limitations is access to a well-educated and well trained workforce in musculoskeletal diseases. This new degree can help address this shortage of properly trained and educated future employees. https://www.wane.com/news/local-news/area-orthopedics-company-expanding-operations/1035599689

The establishment of the Indiana Center for Musculoskeletal Health provides an excellent opportunity to bring students into this exciting and growing area of healthcare. With no cost-effective treatments for long-term treatment of osteoporosis, the need for research in this and other musculoskeletal diseases is clear. This reality is reflected in the priorities of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). This institute which has, along with other areas of the National Institutes of Health, supported growing numbers of Hoosier scientists to conduct basic science, clinical and translational research in musculoskeletal disease, including, for example, the recently funded Indiana Core Center for Clinical Research (P30). https://www.niams.nih.gov/newsroom/announcements/niams-awards-five-new-core-centers-clinical-research

This degree will allow students to be a part of this important strategic research priority reflected in the Indiana BioCrossroads initiative, as well as the pharmaceutical, medical devices and biotechnology industries located across Indiana. Training tomorrow's biomedical scientists that will tackle this growing healthcare challenge is clearly an opportunity for higher education in our state. A new PhD in Musculoskeletal Health Sciences focusing on the growing healthcare needs of our states aging population will contribute to the economic development of the state, increase opportunities for generating new federal research grants and training scientists to improve the overall health of Indiana citizens.

c. Evidence of Labor Market Need

The overall unemployment rate for scientists in health fields with doctoral degrees (PhD) is less than 2% according to NSF Statistics. A recent report in Science nicely summed up the situation:

http://www.sciencemag.org/careers/2016/05/employment-crisis-new-phds-illusion

This National Science Foundation (NSF) report documented that U.S. universities awarded a record number of Ph.D. degrees in 2014: 54,070, with 75% conferred in science and engineering. Despite some gloomy headlines suggesting poor job prospects ("The Ever-Tightening Job Market for Ph.D.s"), the reality is that almost all of those new Ph.D.s are gainfully employed. The Survey of Doctorate Recipients (SDR) 2013 report pegged the unemployment rate for the entire sector at a minuscule 2.1%. (By comparison, the national jobless rate that year stood at about 7.5%). Even when considering just younger scientists the data is encouraging. A special analysis of the 2010 SDR data found that only 2.1% of Ph.D. scientists and engineers were unemployed 2 years after earning their degrees. And that number drops to 1.9% for those 3 to 5 years beyond their degree.

We are confident that this program will support the overall education mission of Indiana University and the IU School of Medicine and provide outstanding career prospects for graduates with a doctoral degree in Musculoskeletal Health. The ICMH was created to leverage the basic and translational research enterprise of a large and productive number of faculty on the Indianapolis campus with research expertise in bone, muscle and joint health. By raising the profile of IU School of Medicine's strengths in musculoskeletal health, the ICMH offers the opportunity to attract greater funding to Indiana, and to solve more problems related to musculoskeletal health. Dr. Lynda Bonewald was hired as the inaugural Center Director in 2016 and under her leadership the ICMH has begun developing a comprehensive basic and clinical heath research center. We believe that offering a doctoral degree in Musculoskeletal Health will be an important component of the Center's development that will be appealing to

student's who choose to enter graduate school at IU via the School of Medicine IBMG gateway program.

The program will also be consistent with the long term strategic plan of the IU School of Medicine (*https://medicine.iu.edu/about/strategic-plan/*), which has made a significant commitment of resources to the formation and development of the ICMH. Offering a doctoral degree that reflects the focus of basic, clinical and translational research in the Center is a key component of the strategic goal of growing the quality of research and having that quality be recognized both nationally and internationally. The opportunity for student's to receive a degree that is clearly associated with the ICMH is an important part of that plan.

We believe this program will build on the strengths of IUPUI. Bone biology has long been area of research strength at the IU School of Medicine. The nucleus of faculty that led to the creation of the ICMH began at IUSM in the 1960's and included distinguished clinical faculty such as Conrad Johnston, MD and, later, basic science faculty like David Burr, PhD. The number of researchers identifying in areas of musculoskeletal biology has grown to approximately 90 and prompted the formation of the ICMH now led by Lynda Bonewald, PhD. Dr. Bonewald is an internationally recognized leader in musculoskeletal research and joined IU as the first Director in 2016.

Letters of Support

Anantha Shekhar, MD, PhD, Associate VP of Research, IUSM
Rafael Bahamonde, PhD, Acting Dean, IU School of Health and Human Sciences
Kathryn Jones, PhD, Chair, Department of Anatomy and Cell Biology, IUSM
Simon Rhodes, PhD, Dean, School of Science, IUPUI
Ed Berbari, PhD, Chair, Department of Biomedical Engineering, IUPUI
David Russomanno, Dean, Purdue School of Engineering and Technology
Timothy P. Gavin, Ph.D., Professor and Department Head, Department of Health & Kinesiology in the College of Health and Human Sciences at Purdue University

(Not included in agenda item)

3. Costs of and Support for the Program

a. Costs

i. Faculty and Staff

The faculty and staff required to offer this program are currently in place to meet the needs of this program. Over half of the approximately 90 ICMH members (see appended excel file of ICMH members) who are full time IU faculty currently serve as the PI on one or more external grants (R01 and equivalent type) totaling over $76 million in research funding (see appended excel file of active funding for ICMH members). What probably can't be seen easily from this list of grants is that there is a good mixture of basic science, clinical and translation medicine research being done by ICMH faculty. Considering there are approximately 90 ICMH faculty members this represents an average of just over $800,000/year in research funding/FTE.

Appended to the end of this proposal is a list of Faculty and Staff associated with the ICMH. An additional 3-5 new full time faculty as well as several additional research support staff will be hired over the coming 1-5 years.

ii. **Facilities**

The Indiana Center for Musculoskeletal Health (ICMH) is an integrated new research center built upon an existing strong faculty base that is highly committed to the academic mission of the IU School of Medicine (https://medicine.iu.edu/research/centers-institutes/musculoskeletal-health/research/). The ICMH is composed of existing investigators located in 8 schools, 4 campuses and 23 departments. Membership is now around 90 with funding greater than $76 million. No additional costs are expected.

iii. Other Capital Costs

None.

b. Support

i. Nature of Support (All support is already existing)

Laboratory:

The ICMH has a newly renovated laboratory space of 4,640 ft2 on the fifth floor of Van Nuys Medical Science building. This includes laboratory space dedicated to specific new ICMH investigators, as well as shared equipment and common areas. The newly renovated lab space is used by the ICMH directors, with 750 ft2 for Dr. Lynda Bonewald, Executive Director, and 560 ft2 for Dr. Monte Willis, Deputy Director, and Dr. Yasu Ueki, an ICMH investigator (560 ft2). The remaining 1,300 ft2 lab space is reserved for new recruits to the ICMH. Portions of this space are dedicated to shared spaces, including an equipment room (200 ft2), a microscopy lab (200 ft2), a cold room (100 ft2), a survival surgery suite (200 ft2) and two tissue culture rooms, one for cell lines (220 ft2) and one for animal tissues (190 ft2).

Additional existing laboratory space on the fifth floor is dedicated to individual ICMH investigators from various departments including: Dr. Robyn Fuchs of Physical Therapy (720 ft2), Dr. Kenneth White of Medical & Molecular Genetics (740 ft2), Dr. Lilian Plotkin of Anatomy & Cell Biology (750 ft2) and Dr. Angela Bruzzaniti of Dentistry (650 ft2), and junior investigators Dr. Nilsson Holguin of Mechanical Engineering (250 ft2) and Dr. Erica Clinkenbeard of Medical & Molecular Genetics (250 ft2). The Mechanobiology Core (250 ft2) is located in previously existing space.

Research Cores:

Presently, the ICMH supports three research cores, the Histology and Histomorphometry Core and Animal Phenotyping Core, both in the Department of Anatomy and Cell Biology. The Histology and Histomorphometry Core utilizes 500ft2 of space adjacent to the ICMH administrative offices, divided into a histology processing area, sectioning area, and two separate microscopy and image analysis laboratories and has all equipment needed for doing decalcified and undecalcified histological preparation as well as cryosections, and has four

separate microscope stations and three separate software packages for performing morphometric analyses.

The Animal Phenotyping Core is located on the second and fifth floors of the Medical Science building, utilizing 950 ft2 of space and contains a majority of the core's in vivo imaging equipment, including an in vivo microCT system, UltraFocus DXA machine, and the anesthetic set-up for in vivo assessment.

Clinical Cores:

With the funding of the Indiana Core Center for Clinical Research in Musculoskeletal Health, ICMH-CRC, through a Clinical P30, directed by Dr. Sharon Moe, funded by NIAMS as of September 2017, the ICMH now includes two clinical cores: a Musculoskeletal Functional Phenotyping Core directed by Stuart Warden and a Resource Core supporting the collection and interpretation of large sets of data through patient medical records, genomics, and other types of analysis and the collection of tissues, blood, bone, muscle, etc. for biobanking directed by Dr. Michael Econs.. The goal of the ICMH-CRC is to provide the needed training and resources to enhance clinical research in musculoskeletal disorders through the use of state of the art technologies to define computable, genetic, molecular, functional and clinical phenotypes. Combinations of these phenotypes will provide a more comprehensive total phenotype of the specific disease or condition. The ICMH-CRC currently operates out of University Hospital on the IUPUI campus, in a 1000 ft2 suite on the fifth floor.

Clinical facilities:

With the funding of the Indiana Core Center for Clinical Research in Musculoskeletal Health, ICMH-CRC, through a Clinical P30 funded by NIAMS as of September 2017, the ICMH now includes two clinical cores: a Musculoskeletal Functional Phenotyping Core directed by Stuart Warden and a Resource Core supporting the collection and interpretation of large sets of data through patient medical records, genomics, and other types of analysis and the collection of tissues, blood, bone, muscle, etc. for biobanking directed by Dr. Michael Econs. The Director of the P30 is Dr. Sharon Moe. The goal of the ICMH-CRC is to provide the needed training and

resources to enhance clinical research in musculoskeletal disorders through the use of state of the art technologies to define computable, genetic, molecular, functional and clinical phenotypes. Combinations of these phenotypes will provide a more comprehensive total phenotype of the specific disease or condition.

Equipment:

Several important pieces of equipment are necessary for the specialized type of research needed to analyze bone and muscle. Much of this equipment is expensive and critical to the ability of researchers to conduct novel research in areas of musculoskeletal health. We include some detail here of this important equipment that is located in ICMH space and is currently available. This equipment represents a significant investment in the future of the Center.

Lionheart FX Automated Live Cell Imager

Located in one of the renovated ICMH lab spaces, MS 506 (1018 ft2), the Lionheart™ FX Automated Microscope is a compact, inclusive microscopy system for a broad range of imaging workflows. It offers up to 60x air; 60x and 100x oil immersion magnification, with fluorescence, bright field, color bright field, and phase contrast channels for maximum application reach. The environment control cover provides incubation to 40°C and effective containment for CO2/O2 control, a humidity chamber optimizes conditions for long-term live cell imaging applications, and the dual reagent injector facilitates rapid kinetic assays. Lionheart FX and Gen5 together comprise Augmented Microscopy™ - the automation of image capture, processing, analysis and development of publication-ready images and data.

SYNERGY HTX Multi-Mode Reader

Also located in MS 506, the Synergy™ HTX Multi-Mode Microplate Reader is a system for 6- to 384-well microplates and Take3 Micro-Volume Plates. Its dual optics design provides superior performance for UV-Vis absorbance, fluorescence, luminescence and AlphaScreen®/ AlphaLISA® workflows. Incubation and shaking plus a dual reagent injector. Synergy HTX is controlled by Gen5 Software for data collection, analysis, exporting and reporting.

The ICMH shared equipment room, in MS 507 (205 ft2), contains a majority of the ICMH's equipment, listed below:

FujiFilm Las-3000

The LAS-3000 imaging system combines Fujifilm's high-sensitivity Super CCD camera technology with the added versatility of white, blue, green and red EPI illuminators. The Super CCD imaging chip, binning mode and specially designed camera lens allow researchers to capture faint-light luminescent images with unprecedented sensitivity and resolution. Multicolor illuminator options enlarge application area in fluorescent imaging. Super CCD - By rotating pixels 45 degrees to form an interwoven layout, the Super CCD's pixel pitch in the horizontal and vertical directions is narrower than in the diagonal direction, achieving higher hori-zontal and vertical resolution.NP Tray Fujifilm Super CCD Area Type imaging chip FUJINON lens VRF43LMD and five-position filter turret The five filter options available for the LAS-3000. More sensitivity for chemiluminescent detection Western blotting, Southern blotting and Northern blotting detection by chemilumi-nescence is a widely accepted method. The use of a cooled CCD camera system enables the generation of a digital image and quanti-tative analysis of the image's signal strength.

BIO-RAD Gel Doc EZ Imager

The Gel Doc EZ imager is a reproducible and fast label-free SDS-PAGE/native PAGE system that eliminates time-consuming staining and destaining steps. Image Lab image acquisition and analysis software works with the Gel Doc EZ imager to create an automated and time-saving system to image and analyze electrophoresis gels. Data can be viewed, modified, and reported using Image Lab software. This system, which consists of the Gel Doc EZ imager and Image Lab software. The Gel Doc EZ imager supports multiple applications, including Coomassie and ethidium bromide staining, blue excitation for nondestructive DNA visualization, and stain-free gel imaging. When coupled with the stain-free gel tray, the Gel Doc EZ imager represents the next generation in stain-free imaging. It features one-button acquisition, yields quick results

with higher image quality, and is so simple to use it requires no training, even for users who are not familiar with image analysis systems.

Biostep imaging

The system can acquire colorimetrically-stained marker proteins as well as gels or blots with whitelight and 365nmLEDs. The newly developed fluorescence option enables the detection of all common fluorophores in UV-VIS-range. It has a double-peltier-cooled 16-bit camera with up to 8.3 Mpixel resolution is positioned below the sample. Therefore, there are no distortions e.g. at acquisition of multi-well plates. Due to the intuitive operation software, acquisition of Western/Northern and Southern Blots as well as multi-well plates makes it a snap. Additionally, it has the intelligent software SnapAndGo®, an overlay of the whitelight image with the chemiluminescent or fluorescent image is possible with correct placement.

Skyscan 1172

Fast scan is supported by a world's fastest hierarchical reconstruction (InstaRecon®) and GPU-accelerated reconstruction including optional GPU-cluster. Cross section images are generated in a wide range of formats up to 8k x 8k pixels. The full range of SkyScan software for 2D/ 3D quantitative analysis and for realistic 3D visualization supplied with all scanners. This instrument provides: Fully distortion corrected 11Mp X-ray camera, up to 8000x8000 pixels in every slice, down to 0.5µm isotropic detail detectability, dynamically variable acquisition geometry for shortest scan at any magnification and the hierarchical reconstruction (InstaRecon®) and GPU-accelerated FDK reconstruction. Software for 2D/ 3D image analysis and realistic visualization by surface and volume rendering. The new large format cooled x-ray digital camera achieves high spatial resolution without compromising sample size.

More ICMH equipment resides in one of ICMH’s laboratory’s on the fifth floor utilized by junior researchers, MS 5002 (750ft2), listed below.

Streamer system STR-4000C

The Streamer® is a parallel-plate flow system that is used to apply fluid-induced shear stress to cells grown in a monolayer. The system includes a six-chamber laminar flow device designed to hold 75 x 25 x 1 mm Culture Slips®. Cells are cultured on these matrixcoated glass slides. StreamSoft software controls a peristaltic pump, thereby regulating the flow rate into the chamber and the magnitude of shear stress applied to the cells. Shear stress values from 0 to 35 dyne/cm2 can be achieved depending on the tubing size used. This six place flow chamber can be used to assess RNA and protein expression by cells in response to fluid-induced shear stress, and production of secreted molecules into the perfusate. Fluid-induced shear stress occurs in every tissue in the body as a result of interstitial fluid movement. Tissue deformation by compression, tension or shear forces results in the movement of interstitial fluid around cells. Fluid movement acts as a transport vehicle for ions, proteins, carbohydrates and other molecules capable of movement within the matrix. As the fluid moves past cell membranes, a shear stress (□) is generated. If one assumes that laminar flow occurs through a parallel-plate flow chamber, fluid-induced shear stress values can be determined with the following formula: □ = 6□Q/bh2 where □ is the shear stress in dyne/cm2 , Q is the viscosity of the fluid in dynes/cm2 , Q is the flow rate in ml/s, b is the width of the flow channel in cm, and h is the height of the flow channel in cm. Shear stress in the vascular system may vary from less than 1 to more than 35 dyne/cm2. Fluid shear stress in canaliculi of bone may vary from 1 to 20 dyne/cm2, while in cartilage it may be in the range of 1 to 5 dyne/cm2

Flexercell systems

A computer-regulated bioreactor that uses vacuum pressure to apply cyclic or static strain to cells cultured on flexible-bottomed culture plates. Analyze biochemical changes in response to strain in cells from bone, muscle, lung, heart, vascular vessels, skin, tendon, ligament, and cartilage. Uses vacuum pressure to deform a flexible-bottomed culture plate yielding up to 33% substrate elongation. Applies a defined, controlled, static or cyclic deformation to cells growing in vitro.

Thermo Forma Reach-IN CO2 incubator

Culture large volumes of samples for cells growth, perform short-term growth studies and work with large volume products. The Thermo Scientific™ Large-Capacity Reach-In CO2 Incubator offers a broad range of built-in Features: that provide optimal flexibility. This unit provides elevated RH to prevent product desiccation in medium-term cultures and maintains temperature uniformity, even when equipment (cell rollers, rockers, shakers, spinners, stirrers) is installed in the chamber. The ICMH also contains tissue culture hoods, incubators, freezers, liquid nitrogen tanks, PCR machines, etc.

Computer resources

Faculty and staff receive a personal computer. University Information Technology Services at Indiana University develops and maintains a modern information technology environment for the university. UITS provides tools and services to support the academic and administrative work of the university, including a high-speed campus network with wireless access, central web hosting, a rich selection of free and low-cost software for personal use, tools and support for instruction and research, and supercomputers for data analysis and visualization. Regarding supercomputer capacity, Big Red II is Indiana University's main system for high-performance parallel computing. With a theoretical peak performance (Rpeak) of one thousand trillion floating-point operations per second (1 petaFLOPS), Big Red II is among the world's fastest research supercomputers. Owned and operated solely by IU, Big Red II is designed to accelerate discovery in a wide variety of fields, including medicine, physics, fine arts, and global climate research, and enable effective analysis of large, complex data sets (i.e., big data).

Biostatistics

Each laboratory has computers with software for word processing, spreadsheets, desktop publishing, image manipulation and graphics, and database management. Additional computers are available to research assistants and graduate students. The Department of Biostatistics provides access to statistical analysis software available for the Windows® platform includes SAS®, S-PLUS®, SPSS®, Stata®, SigmaPlot®, Lisrel®, LogXact®, StatXact®, nQuery®, PASS®, Solas®,

EQS®, Comprehensive Meta- Analysis®, BILOG-MG®, MULTLOG®, PARSCALE®, TESTFACT®, and Sudaan®. Indiana University's Enterprise License Agreement with Microsoft allows for widespread use of their Windows® operating systems, Office® suites, and Visual Studio® development tools. Also available is general/utility software that includes DBMScopy®, Exceed®, SSH®, WinZip®, StuffIt®, and Symantec Antivirus®.

For statistical analysis requiring even more computing power, the IU supercomputers are available to anyone in our research community. Software available on those systems include BMDP®, Gauss®, GLIM®, LISREL®, Minitab®, PRELIS®, RATS®, SAS®, S-PLUS®, SPSS®, Stata®, TSP®, LINDO®, Maple®, Matlab®, and Mathematica®. University Information Technology Services (UITS) manages the research supercomputers.

The Department of Biostatistics is in the Indiana University School of Medicine and the Richard M. Fairbanks School of Public Health. The department has a faculty of seventeen biostatisticans. The support staff includes a number of master's level statisticians, bachelor's level data managers and administrative staff. The faculty and staff collaborate with or provide support to investigators in the Schools of Medicine, Nursing, and Dentistry.

Enrollments, costs and support

We anticipate enrolling 3-5 students per year. Students pursuing the PhD degree in Musculoskeletal Sciences will be drawn from the pool of IBMG students (the size of the incoming class is expected to be between 30-40 students/year for the next several years). Time to degree we anticipate to be approximately 5 years. The stipend for IBMG students is currently $27,000 and the cost of tuition is approximately $12,000 (in-state) for the first 3 years (or until 90 credits are completed). For most of years 4-5 (after 90 credits), tuition is only $100/semester via registering for G901. We anticipate that our faculty will have sufficient resources from external grant funding to support 3-5 students per year. The additional cost of out-of-state tuition for IBMG students is borne largely by the IUSM Graduate Division.

Additional funding will be available through a T32 training grant (T32AR065971, PI: Burr, David) which includes funds for 3 pre-doctoral students per year. Through the first three years

of the Comprehensive Musculoskeletal Training Program, 6 different pre-doctoral students have been supported in ICMH member laboratories. One pre-doctoral student (Amy Sato) completed her PhD, and three others (Whitney Bullock, Mohammad Aref and Hannah Davis) successfully competed for F30 and F31 awards. As students complete their degree or receive their own individual pre-doctoral awards, additional student applicants are considered for support by the training grant. A competitive renewal for this 5-year training grant which currently runs through June 2020 was submitted in May 2018 with NIH review in October, 2018.

Our estimate of 3-5 student's per year entering the degree program is based on the expectation that about 10% of funded faculty will agree to mentor a student each year. Over a 5 year period this would involve 15-25 students in the program at any given time. Even this would represent only about half of our currently funded faculty serving as faculty mentor for a student at any given time.

The ICMH has committed funds to support the stipend and tuition for an additional 2 students to be recruited into the IBMG program in fall 2019. This will allow a small increase in the number of IBMG students that can be admitted. After students declare their interest in obtaining a degree in the Musculoskeletal Health Sciences PhD degree program, the stipend and tuition costs are borne by the faculty mentor. These costs are typically covered by research grants, training grants or individual fellowships awarded to students (i.e., F30/F31).

We anticipate that the bulk of the revenue generated to support the program will be derived from 1) tuition research credits (derived primarily from tuition paid from research and training grants), 2) tuition coursework credits based on teaching effort of ICMH faculty (derived based on MOU's to be established between School of Medicine department chairs and the ICMH center director), and 3) training grants (current T32, dependent on continued competitive renewals and at least one planned training grant in translational research in musculoskeletal health).

. Similar and Related Programs

i. Similar Programs at other institutions.

Several medical schools have research training opportunities for MD/PhD combined degrees. Very few schools have focused degree programs in bone and muscle research for students seeking to earn a PhD. We are not including schools with doctoral degree programs in Rehabilitation Sciences, Physical Therapy, Exercise Physiology or Exercise Science, many of which focus on skeletal and muscle health but are distinct from the purpose of this proposed degree on musculoskeletal disease.

- Purdue has Nutrition and Animal Sciences programs with investigators working in musculoskeletal research, and a graduate program in Musculoskeletal and Orthopaedic Innovation within the Weldon School of Biomedical Engineering, but nothing on the scale of this proposed doctoral degree.

- Washington University: The John T. Milliken Department of Medicine, Division of Bone & Mineral Diseases offers a Skeletal Disorders Training Program. This is an NIH-funded T32 institutional training program in Metabolic Skeletal Disorders that supports research training for PhD and MD/PhD students and postdoctoral fellows. Its focus is the molecular mechanisms of skeletal biology and diseases.

- University of Alabama at Birmingham offers a combined MD/PhD degree program in Rheumatic and Musculoskeletal Diseases, however this not available as a stand alone PhD degree.

- University of Oxford has a DPhil in Musculoskeletal Sciences. This doctoral degree is designed to provide clinical and non-clinical graduates with a variety of research skills in specific musculoskeletal-related fields of research.

- University of Manchester offers a PhD Musculoskeletal degree through their Center for Musculoskeletal Research that focusses on investigation of musculoskeletal disease, from inflammatory conditions to osteoarthritis and pain syndromes.

ii. Related Programs at Proposing Institution. None

5. <u>Quality and Other Aspects of the Program</u>

Oversight of the program will be through the ICMH Education Committee. Current committee members include:

- Rafael Bahamonde, Acting Dean, School of Health and Humans Sciences
- Joe Bidwell, IU School of Medicine*
- Andrew Dean, IU School of Medicine
- Robyn Fuchs, School of Health and Human Sciences, Physical Therapy
- Margaret McNulty, IU School of Medicine
- Jason Organ, IU School of Medicine
- Fred Pavalko, IU School of Medicine
- Lilian Plotkin, IU School of Medicine
- Ken White, IU School of Medicine
- Teresa Simmers, IU School of Medicine
- Lynda Bonewald, Director ICMH, IU School of Medicine

*Dr. Joe Bidwell will serve as graduate director of the program.

The program is designed to be completed in approximately 4.5-5 years. A minimum of 30 hours of coursework credits and a total of 90 hours including dissertation research credits will be required, including the following required "core" courses:

G715 Biomedical Science I 2 cr
G716 Biomedical Science II 2 cr
G717 Biomedical Science III 2 cr
G819 Basic Bone Biology 3 cr
G801 Cell Biology of the Neuromusculoskeletal System - 3 cr
G655 Research Communication Seminar - 1 cr
G718 Research rotations - (3 rotations x 2 cr) = 6 cr
G505 Ethics - 1 cr
G855 Experimental Biostatistics - 1 cr

Electives - 9 cr - choose from the following list of courses; additional existing courses are likely to be added to this list to allow for completion of a minor as determined by the ICMH Education Committee. In addition, students will be expected to attend relevant weekly research seminars

offered by the ICMH or academic units within the IU School of Medicine, SHHS, IUPUI School of Science or Purdue School of Engineering and Technology.

G749 Introduction to Structural Biology (1 cr)
G725 Gene Therapy (1 cr)
G848 Bioinformatics, Genomics, Proteomics and Systems Biology (2 cr)
G817 Molecular Basis of Cell Structure and Function (2 cr)
G727 Animal Models of Human Disease (1 cr)
D501 Human Gross Anatomy (5 cr)
D502 Basic Histology (4 cr)
D851 Histology (4 cr)
G737 Introduction to Histology (1 cr)
G734 Advanced Molecular Imaging (1 cr)
G720 Stem Cell Biology (2 cr)
G747 Principles of Pharmacology (1 cr)
F503 Human Physiology (5 cr)

Generally, students will follow the expectations of the IU School of Medicine IBMG program (https://medicine.iu.edu/education/graduate-degrees/phd/) for forming Research Committees. The following section in italics is taken directly from the IUSM Graduate Degree Education webpage:

> *Research Committee*
>
> *Research committees initiate research for student dissertations. They are approved by the dean and are required to meet at least twice a year. The committee has the responsibility of supervising the research, reading the dissertation and conducting the final examination.*
>
> - *The student chooses a professor who agrees to direct the dissertation, endorsed by the University Graduate School.*
> - *In some instances, it might be important to include individuals from other departments or disciplines (i.e., a relevant MD) on the student's committee.*
> - *Committee members must also be members of the graduate faculty who are best qualified to assist the student in conducting the dissertation research.*
> - *Members include the chosen director (serving as committee chairperson), two or more additional faculty members from the major department and a representative for each minor.*

Research rotations, selection of a mentor and advising: Students will select a graduate mentor following a minimum of 3 research rotations but not later than the completion of the second semester. Students will be supervised in the program by their research committee assembled in consultation with the graduate director and graduate mentor. Students will

complete a qualifying exam by the end of the second year. The exam will be designed and administered by the research committee and will consist of a written NIH F32-style research grant application and an oral exam administered by the research committee. Following successful completion of the qualifying exam and advancement to candidacy, students will be supervised by a research committee that reviews and approves the student's research proposal and meets every 6 months to review the student's progress towards completion of their dissertation research project. Students will also be expected to participate weekly in the ICMH "journal Club" and the "Research Club" designed specifically for students and postdocs affiliated with the ICMH.

Dissertation: Dissertation research will follow the guidelines of the IU Graduate School and will serve as the ultimate academic tests of a student's competency. Students will demonstrate their ability to apply key aspects of the curriculum to improving the understanding and treatment of musculoskeletal disease. The student's dissertation project will demonstrate mastery of the skills and knowledge required to pursue a career in health-related research that will advance patient health and develop new knowledge related to musculoskeletal health. The research included in the dissertation should be of publishable quality in the scholarly literature. Typically the research committee will seek evidence that the dissertation research has been, or will soon be published in high quality journals. A public oral presentation of the dissertation research and a successful oral comprehensive examination by the research committee will be required prior to completion of the degree.

Appointment of new mentors to the program. As new faculty join the faculty of the ICMH, the center director (currently Dr. Lynda Bonewald) will, in consultation with the ICMH committee and the program graduate director, consider appointing new faculty as mentors to the program. Appointment of new center faculty as program mentors will only be considered for those who are also eligible for graduate faculty status as determined by the IU Graduate School.

Review and approval of mentors taking on a specific student and responsibility for stipend support, tuition and health fees. When a faculty mentor agrees to take on the training

of a student as the primary mentor and serve as the student's committee chair, this agreement will require the approval of the ICMH director. If the mentor's faculty appointment is in a school other that the IU School of Medicine, approval by the Dean of the mentor's school will also be required. The center director (and Dean if the mentor is not appointed in the School of Medicine) will consider factors including the proposed faculty mentors funding situation, whether the research environment will be supportive and conducive to student success, and assure that the student and mentor are clear and in agreement on what will be expected both in terms of faculty mentoring and the student's responsibilities as a doctoral student trainee in the laboratory. Faculty mentors will be responsible for paying student stipend, tuition and health insurance fees beginning with the start of year 2 in the IBMG program. In the event that a faculty mentor loses funding or is otherwise unable to pay costs associated with the stipend, tuition and health fees, as long as the student remains in good standing and is making progress toward the completion of their degree, the ICMH director will be responsible for paying these costs when the mentor's faculty appointment is in the IU School of Medicine. If the faculty mentor's primary appointment is in the School of Health and Human Sciences (SHHS), the Biomedical Engineering (BME) program, or another school of the IUPUI campus, the Dean of that school will be responsible for covering the costs of continued support. A copy of a memorandum of understanding (MOU) between the ICMH and SHHS is appended to this proposal as an example of how we are assuring full understanding of responsibilities when the mentor is not appointed in the IU School of Medicine.

Options for students who begin but are unable to complete the Musculoskeletal Health Sciences doctoral degree requirements. Students that begin work towards the doctoral degree but are unable to complete all the requirements for the will have the option of receiving a Master's degree in Musculoskeletal Health Science. This option will be available only to students that were admitted first to the PhD degree program and have completed sufficient graduate coursework credits to qualify for an IU Graduate School Master's degree. A description if the MS degree requirements are appended at the end of this document. In short, the MS degree option will have no specific research requirements (it will be a non-thesis degree) and, at this time, there are no plans to admit students directly to an MS degree track in

Musculoskeletal Health Science. If at some point in the future pursuit of a direct admit, dedicated MS degree by the ICMH is desired, the ICMH will seek appropriate by the IU Graduate School.

Program and student assessment and review.

a. Program competencies and Learning Outcomes. Graduate students earning a PhD in Musculoskeletal Health Science from Indiana University on the IUPUI campus will demonstrate the following abilities related to the research focus of the degree:

Demonstrate the knowledge and skills necessary to identify and conduct original research in skeletal and/or muscle health and disease. This knowledge and skill will be acquired through didactic course work, participation in the weekly ICMH journal club, attendance at research seminars organized or sponsored by the ICMH, direct mentoring by faculty advisor, studying and writing grant proposals as part of their qualifying exam. Assessment of learning will be made by grades in course work, the ability to pass a cumulative preliminary examination administered by the student's research committee, ability to pass an oral and written qualifying examination, direct laboratory assessment by the research mentor, direct assessment of progress by the research committee for the dissertation.

Ability to effectively communicate expert level information in the student's area of research focus in particular, and in the general area of musculoskeletal health more broadly. These abilities will be acquired by attendance at required seminars given by faculty and peers, presentation at for their research at informal laboratory meetings and at formal ICMH seminars, mentored writing of grant proposals and manuscripts, both as part of their qualifying exam and part of their research training. Assessment of these skills will be made by successful completion of the oral and written portions of the qualifying examinations, grades on formal seminar presentations based on outcomes rubrics, publication of manuscripts, and awarding of pre-doctoral fellowship grants and grants-in-aid of their research.

Ability to think critically and creatively to solve problems in Musculoskeletal Health. These abilities will be acquired by attendance required at seminars by faculty and peers, presentation at informal laboratory meetings and at formal seminars, writing pre-proposal for dissertation, and writing a dissertation proposal. Success in obtaining these skills will be made by evaluation and grading of formal seminar presentations, on outcomes assessment rubrics appropriate for the students specific area of research, direct assessment by the mentor and research committee members and other faculty on the student's pre-proposal and dissertation proposal, publication of research manuscripts, success in getting pre-doctoral grant proposals funded.

Ability to conduct research in an ethical and responsible manner. These abilities will be acquired by successfully completing a required courses in research ethics, modeling of appropriate behavior in seminars by faculty and peers, direct mentoring by research director, mentoring by the dissertation research committee. Acquisition of these skills will be assessed by the grade in ethics classes, assessment by outcomes rubrics appropriate for the student's specific are of research, direct observation of data handling by the research mentor, direct oversight by dissertation research committee on issues of research compliance and ethics

The student's research committee will conduct twice yearly reviews of the student's progress through committee meetings with the student. The ICMH committee will meet at least once each year to assess whether the Musculoskeletal Health Sciences program is meeting its goals of adequately preparing students in each of these areas. Considerations that might be undertaken by the ICMH education committee include replacing faculty in certain required courses, considering the need to adopt new methods to present material, offering additional options for training such as grant and manuscript writing workshops, advising students to participate in the Preparing Future Faculty program at IUPUI, and considering whether student's might benefit for training in other laboratories within IUPUI or at another institution if short term training would be necessary. Any such suggestions would be made in consultation with the student's mentor and research committee.

b. Internal and external review of the program. The program's overall success will be evaluated regularly by the office of the Associate Dean of the Graduate Division within the IU School of Medicine. Along with other doctoral degree programs within the IU School of Medicine, the Musculoskeletal Health Science program will be evaluated by an external review committee convened either by the IU School of Medicine Dean's office or by the IUPUI Chancellor's office.

c. Placement of students. As described above in more detail, and summarized briefly here, the Musculoskeletal Health Science degree program aligns well with the priorities and goals of the Indiana Commission for Higher Education's *Reaching Higher, Achieving More* agenda developed in 2012. It is a student-centered degree that provides an opportunity for those that have earned a Bachelor's degree to pursue a doctoral degree in an important area of biomedical healthcare. Demographic facts including an aging population will require an increased need for care and treatment of musculoskeletal diseases known to be more prevalent in older people. Osteoporosis and osteoarthritis (OA) has a profound economic, personal, and societal impact in the United States. ICMH researchers are working on these health problems and also working to address the connection between other systemic diseases such as diabetes,

kidney disease and cancer in recognition of the fact that musculoskeletal disease impacts other serious health conditions.

Abundant opportunities for career placement should be available to our graduates. Indiana is widely recognized for its important role in the $48 billion orthopedic medical device industry having been dubbed the "Orthopedic capital of the world" by industry leaders. Indiana companies including Zimmer Biomet, DePuy Synthes, Medtronic, and others are responsible for nearly 40% of the worldwide orthopedic device market. This industry, along with pharmaceutical giant Eli Lilly will remain an important employer of in medical devices, equipment, supplies and pharmaceuticals for the foreseeable future. One of their few limitations is access to a well-educated and well trained workforce in musculoskeletal diseases. This new degree can help address this shortage of properly trained and educated future employees.

The establishment of the Indiana Center for Musculoskeletal Health and the opportunity for students to be trained at the PhD level in these areas address the priorities of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). This institute which has, along with other areas of the National Institutes of Health, supported growing numbers of Hoosier scientists to conduct basic science, clinical and translational research in musculoskeletal disease, including, for example, the recently funded Indiana Core Center for Clinical Research (P30). https://www.niams.nih.gov/newsroom/announcements/niams-awards-five-new-core-centers-clinical-research

This degree will allow students to be a part of this important strategic research priority reflected in the Indiana BioCrossroads initiative, as well as the pharmaceutical, medical devices and biotechnology industries located across Indiana. Training tomorrow's biomedical scientists that will tackle this growing healthcare challenge is clearly an opportunity for higher education in our state. A new PhD in Musculoskeletal Health Sciences focusing on the growing healthcare needs of our states aging population will contribute to the economic development of the state,

increase opportunities for generating new federal research grants and training scientists to improve the overall health of Indiana citizens.

We are confident that this program will support the overall education mission of Indiana University and the IU School of Medicine and provide outstanding career prospects for graduates with a doctoral degree in Musculoskeletal Health. The program will also be consistent with the long term strategic plan of the IU School of Medicine (*https://medicine.iu.edu/about/strategic-plan/*), which has made a significant commitment of resources to the formation and development of the ICMH. Offering a doctoral degree that reflects the focus of basic, clinical and translational research in the Center is a key component of the strategic goal of growing the quality of research and having that quality be recognized both nationally and internationally.

Projected Headcount and FTE Enrollment estimates and degrees conferred

The following was compiled by Dr. Philemon Yebei, IU Assistant Vice President for Administration as a preliminary estimate of anticipated student enrollments in the new degree. This estimate is part of a comprehensive analysis of the financial sustainability of the program assuming 4 new students per year.

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

Institution/Location:	IUPUI
Program:	PhD in Musculoskeletal Health Sciences
Proposed CIP Code:	
Base Budget Year:	2019-20

	Year 1 2019-20	Year 2 2020-21	Year 3 2021-22	Year 4 2022-23	Year 5 2023-24
Enrollment Projections (Headcount)					
Full-time Students	4	8	12	16	20
Part-time Students	-	-	-	-	-
	4	8	12	16	20
Enrollment Projections (FTE)*					
Full-time Students	3	6	9	12	15
Part-time Students	-	-	-	-	-
	3	6	9	12	15
*Sum of rounded detail may not equal rounded totals.					
Degree Completion Projection	-	-	-	-	4

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM B: **Academic Degree Programs for Expedited Action**

Staff Recommendation

That the Commission for Higher Education approve the following degree programs, in accordance with the background information provided in this agenda item:

- Master of Arts in Curatorship to be offered by Indiana University Bloomington
- Master of Science in Genome, Cell, and Developmental Biology to be offered by Indiana University Bloomington
- Master of Science in Neuroscience to be offered by Indiana University Bloomington
- Bachelor of Science in Data Science to be offered by Indiana University Bloomington
- Master of Science in Criminal Justice and Public Safety to be offered by Indiana University Northwest
- Master of Science in Education in Educational Technology for Learning to be offered by Indiana University Bloomington, East, IUPUI, Kokomo, Southeast, and South Bend

Background

The Academic Affairs and Quality Committee discussed these programs at its July 22, 2019 meeting and concluded that the proposed programs could be placed on the August 8, 2019 agenda for action by the Commission as expedited action items.

Supporting Document

Academic Degree Programs on Which Staff Propose Expedited Action July 22, 2019

Academic Degree Program on Which Staff Propose Expedited Action
July 22, 2019

CHE 19-11 Master of Arts in Curatorship to be offered by Indiana University Bloomington

Proposal received on June 21, 2019
CIP Code: 30.1401
Fifth Year Projected Enrollment: Headcount – 16, FTE – 11
Fifth Year Projected Degrees Conferred: 14

The proposed M.A. in Curatorship will be housed in the University Graduate School and will consist of courses from three academic units: the College of Arts and Sciences; the School of Informatics, Computing, and Engineering; and the School of Public and Environmental Affairs. Collections – material, visual, and textual – provide the essential bases of evidence for scholarship in virtually all academic endeavors, and their curation (including everything from collection and classification to preservation and protection to study, interpretation, and dissemination) requires experts who understand those intellectual endeavors as much as they do the practical requirements of object care; the objective of the proposed program is to prepare these experts. IU holds 50 collections, which comprise approximately 30 million objects, including the IU Eskenazi Art Museum, Grunwald Gallery of Art, Mathers Museum of World Cultures, Archives of African American Music and Culture, Archives of Traditional Music, Moving Image Archive, Lilly Library, IU Paleontology Collection, Elizabeth Sage Costume Collection, and Kinsey Institute. Students in the proposed program will be encouraged to pursue internships in these and other collections, either on campus or elsewhere.

Indiana University offers the only master's degree program related to the proposed Bloomington program: the 36-credit hour M.A. in Museum Studies, which the Commission approved for IUPUI in May 2014 and which averaged 31 enrollees and 13 graduates over each of the past three years (FY2016-FY2018). The M.A. in Curatorship requires 30 credit hours.

CHE 19-12 Master of Science in Genome, Cell, and Developmental Biology to be offered by Indiana University Bloomington

Proposal received on June 21, 2019
CIP Code: 26.0210
*Third Year Projected Enrollment: Headcount – 2, FTE – 2
*Third Year Projected Degrees Conferred: 2

The M.S. in Genome, Cell, and Developmental Biology will be offered through the Department of Biology in the College of Arts and Sciences. The proposed M.S. is a stop-out master's program that is intended for students who begin the Ph.D. in Genome, Cell, and Developmental Biology but cannot complete the doctoral program. No students will be directly admitted into the M.S., which requires 30 credit hours. Over the last three

years (FY2016-FY2018), the Ph.D. in Genome, Cell, and Developmental Biology has had an annual average of 45 enrollees and six graduates.

CHE 19-13 Master of Science in Neuroscience to be offered by Indiana University Bloomington

Proposal received on June 21, 2019
CIP Code: 26.1501
*Third Year Projected Enrollment: Headcount – 2, FTE – 2
*Third Year Projected Degrees Conferred: 2

The M.S. in Neuroscience will be offered through the Program in Neuroscience in the College of Arts and Sciences. The proposed M.S. is a stop-out master's program that is intended for students who begin the Ph.D. in Neuroscience but cannot complete the doctoral program. No students will be directly admitted into the M.S., which requires 30 credit hours. Over the last three years (FY2016-FY2018), the Ph.D. in Neuroscience has had an annual average of 17 enrollees and two graduates.

CHE 19-14 Bachelor of Science in Data Science to be offered by Indiana University Bloomington

Proposal received on June 21, 2019
CIP Code: 30.3001
*Eighth Year Projected Enrollment: Headcount – 132, FTE – 120
*Eighth Year Projected Degrees Conferred: 54

This program will be offered through four departments of the School of Informatics, Computing, and Engineering (Computer Science, Informatics, Information and Library Science, and Intelligent Systems Engineering) as well as two departments in the College of Arts and Sciences (Mathematics and Statistics). Its broad, blended curriculum will focus on the tools needed to solve problems and improve decision making through the use of data.

The B.S. in Data Science requires 120 semester hours of credit, thus meeting the standard credit hour expectation for baccalaureate degrees. There is no TSAP (Transfer Single Articulation Pathway) that applies to the proposed program. Furthermore, no articulation agreement is possible with Ivy Tech Community College or Vincennes University. Thus, students starting at Ivy Tech and Vincennes would be advised to complete the 30-hour Statewide Transfer General Education Core (STGEC), which would apply toward meeting the Data Science degree requirements, prior to transfer.

CHE 19-16 Master of Science in Criminal Justice and Public Safety to be offered by Indiana University Northwest

Proposal received on June 21, 2019
CIP Code: 43.0103
Fifth Year Projected Enrollment: Headcount – 6, FTE – 4
Fifth Year Projected Degrees Conferred: 3

In June 2018, the Commission approved the collaborative offering of a fully online M.S. in Criminal Justice and Public Safety involving five IU campuses: Bloomington, East, IUPUI, Kokomo, and Southeast. At the time, the IU Northwest campus was not in a position to join this collaborative offering, but is now prepared to do so. The IU Northwest contribution to the collaborative offering would be through the School of Public and Environmental Affairs (SPEA) and the College of Health and Human Services. IU Northwest offers a B.S. in Criminal Justice, which enrolled 208 headcount students and had 50 graduates in FY2018. The collaborative M.S. in Criminal Justice and Public Safety is coordinated through two Indiana University system-level offices: the Office of Collaborative Academic Programs and the Office of Online Education. Because of the months required to receive approval by the Higher Learning Commission, this collaborative program is being offered for the first time this fall.

The M.S. in Criminal Justice and Public Safety requires 33 credit hours.

CHE 19-17 Master of Science in Education in Educational Technology for Learning to be offered by Indiana University Bloomington, East, IUPUI, Kokomo, Southeast, and South Bend

Proposal received on June 21, 2019
CIP Code: 13.9999
Fifth Year Projected Enrollment: Headcount – 180, FTE – 66
Fifth Year Projected Degrees Conferred: 84

The proposed M.S.Ed. in Educational Technology in Learning would be offered 100% online, using the Learning Management System Canvas, through collaboration among the Schools of Education at six IU campuses: Bloomington, East, IUPUI, Kokomo, Southeast, and South Bend (only IU Northwest is not participating at this time). It is designed to prepare e-learning developers, instructional designers, corporate trainers, researchers, and education content developers, entrepreneurs in training and development, and technology leaders in schools. The collaborative M.S.Ed. in Educational Technology in Learning is coordinated through two Indiana University system-level offices: the Office of Collaborative Academic Programs and the Office of Online Education.

The M.S.Ed. in Educational Technology in Learning requires 36 credit hours.

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-1: **Ball State University – New Indoor Field Practice Facility**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Ball State University – New Indoor Field Practice Facility

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

BSU Indoor Field Practice Facility

Ball State University – New Indoor Field Practice Facility

STAFF ANALYSIS

The Ball State University Board of Trustees requests authorization to proceed with the construction of a new indoor field practice facility. As the only remaining institution in the Mid-American Conference without an indoor facility, Ball State will construct a new indoor field practice facility for its turf-based programs such as football, soccer, softball and baseball. In addition to providing practice space for athletic teams during unfavorable weather, the proposed new facility would also provide an additional multi-use venue for other activities.

Funding: The estimated cost of this project is $15,000,000 and will be funded from gift funds.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY
FOR: NEW INDOOR FIELD PRACTICE FACILITY

Institution:	Ball State University	**Budget Agency Project No.:**	D-1-19-1-03
Campus:	Muncie	**Institutional Priority:**	1
Previously approved by General Assembly:	No	**Previously recommended by CHE:**	No
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	84,000 GSF (1)	78,400 ASF (2)	93.3%	ASF/GSF
Net change in overall campus space:	84,000 GSF	78,400 ASF		

Total cost of the project (3): $ 15,000,000

Cost per ASF/GSF: $ 179 GSF; $ 191 ASF

Funding Source(s) for project (4):	Amount	Type
	$ 15,000,000	Gift Funds

Estimated annual debt payment (6): 0

Are all funds for the project secured: Yes

Project Funding:

A capital campaign specifically for this project has been undertaken with nearly all needed funds already having been committed. Internal University reserves will be used to cash flow the project costs until all pledges and gifts are received.

Project Cost Justification

Project costs for this facility are lower than the typical university building due to the nature of its construction and the nature of the facility. Approximately 95% of the building GSF is the practice area. The remaining 5% of the facilty is support space, including restrooms, storage, a small lobby, and an office for the facility manager.

Estimated annual change in cost of building operations based on the project: $ 532,000

Estimated annual repair and rehabilitation investment (5): $ 390,000 The University's target for annual R&R funding is 3%.

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

FOR: NEW INDOOR FIELD PRACTICE FACILITY

Institution:	Ball State University	**Budget Agency Project No.:**	D-1-19-1-03
Campus:	Muncie	**Institutional Priority:**	1

Description of Project

The proposed project calls for construction of a new indoor practice facility for the University's turf-based sports teams such as football, soccer, softball and baseball. The approximately 84,000 gross square foot building would be built on campus in close proximity to the gameday venue for these sports programs.

Need and Purpose of the Program

With the opening of a similar facility at the University at Buffalo in April 2019, Ball State University remains as the only institution in the Mid-American Conference that does not have an indoor field practice facility. The indoor facility would provide for a safe practice venue during inclement weather as well as provide an additional multi-use venue for other activities.

Space Utilization

There is high demand for practice space for these varsity sports programs. During unfavorable weather conditions, practices must often move indoors to space that is shared with other users. This creates scheduling issues in these current indoor spaces such as the Field Sports Building and the Student Recreation & Wellness Center.

Comparable Projects

Project	Year	Project Cost ($M)	GSF	$/GSF	Inflated to 2020 $*	
Ball State University	2020	$ 15.0	84,000	$178.57	$178.57	
University of Louisville	2005	$ 8.0	92,000	$87.07	$156.80	
Colorado State University	2008	$ 11.4	66,300	$172.23	$275.75	
Clemson University	2010	$ 9.6	90,800	$105.42	$156.05	
Ohio University	2014	$ 11.2	89,800	$124.18	$157.12	Fellow MAC Member
Miami University	2014	$ 13.3	91,000	$146.36	$185.20	Fellow MAC Member
University at Buffalo	2018	$ 15.4	90,000	$171.34	$185.33	Fellow MAC Member

*Assumes 4% inflation per annum

Background Materials

Ball State University is committed to providing its student athletes and athletic programs with the support they need to be successful. An indoor field practice facility has been a part of the long-term capital plan for these programs for several years. The University is also fortunate to have benefactors that are also committed to supporting these programs. These donors are stepping up to fully fund this new facility on campus.

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR NEW INDOOR FIELD PRACTICE FACILITY

	Current Campus Totals				Capital Request		
INDOOR FIELD PRACTICE FACILITY D-1-19-1-03	**Current Space in Use**	**Space Under Construction (1)**	**Space Planned and Funded (1)**	**Subtotal Current and Future Space**	**Space to be Terminated (1)**	**New Space in Capital Request (2)**	**Net Future Space**
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	**140,931**	**5,662**	**8,118**	**154,711**			**154,711**
Class Lab (210,215,220,225,230,235)	**372,038**	**7,055**	**49,622**	**428,715**			**428,715**
Non-class Lab (250 & 255)	34,877		29,979	**64,856**			**64,856**
Office Facilities (300)	653,518	31,147	18,246	**702,911**			**702,911**
Study Facilities (400)	192,153	70	8,436	**200,659**			**200,659**
Special Use Facilities (500)	419,873	31,543	1,599	**453,015**		78,400	**531,415**
General Use Facilities (600)	312,618	1,357		**313,975**			**313,975**
Support Facilities (700)	110,469	56,700	3,157	**170,326**			**170,326**
Health Care Facilities (800)	7,249	19,400		**26,649**			**26,649**
Resident Facilities (900)	1,769,043	101,000	(198,663)	**1,671,380**			**1,671,380**
Unclassified (000)	146,901	(333)	7,346	**153,914**			**153,914**
B. OTHER FACILITIES							
Parking Garages	469,752		7,346	**477,098**			**477,098**
TOTAL SPACE	**4,629,422**	**253,601**	**(64,814)**	**4,818,209**	**-**	**78,400**	**4,896,609**

CAPITAL PROJECT COST DETAILS
FOR: NEW INDOOR FIELD PRACTICE FACILITY

Institution:	Ball State University	**Budget Agency Project No.:**	D-1-19-1-03
Campus:	Muncie	**Institutional Priority:**	1

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	June	2020
Start Construction	July	2020
Occupancy (End Date)	May	2021

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering	$ 450,000		$ 450,000
b. Architectural	$ 852,000		$ 852,000
c. Consulting	$ 98,000		$ 98,000
Construction			
a. Structure	$ 8,725,000		$ 8,725,000
b. Mechanical (HVAC, plumbing, etc.)	$ 2,115,000		$ 2,115,000
c. Electrical	$ 2,000,000		$ 2,000,000
d. Demolition of Existing Facilities	$ -		$ -
Movable Equipment	$ 100,000		$ 100,000
Fixed Equipment	$ 200,000		$ 200,000
Site Development/Land Acquisition	$ 410,000		$ 410,000
Other (Legal/Administra)	$ 50,000		$ 50,000
TOTAL ESTIMATED PROJECT COST	**$ 15,000,000**	**$ -**	**$ 15,000,000**

CAPITAL PROJECT OPERATING COST DETAILS
FOR: NEW INDOOR FIELD PRACTICE FACILITY

Institution: Ball State University
Campus: Muncie
Budget Agency Project No.: D-1-19-1-03
Institutional Priority: 1

GSF OF AREA AFFECTED BY PROJECT 84,000

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	$ 0.65	**$ 55,000**	$ 55,000	
2. Maintenance	$ 2.09	**$ 175,560**		$ 175,560
3. Fuel	$ 0.65	**$ 54,600**		$ 54,600
4. Utilities	$ 1.85	**$ 155,400**		$ 155,400
5. Other	$ 1.09	**$ 91,560**		$ 91,560
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**6.3347619**	**$ 532,120**	**$ 55,000**	**$ 477,120**

Description of any unusual factors affecting operating and maintenance costs/savings.

This facility will not be air conditioned, which offers a significant reduction in the ongoing operating costs.

ROOM USE CATEGORIES

(100) Classroom Facilities
110 Classroom
115 Classroom Service

(200) Laboratory Facilities
210 Class Laboratory
215 Class Laboratory Service
220 Open Laboratory
225 Open Laboratory Service
250 Research/Non-class Laboratory
255 Research/Non-class Laboratory Service
Note: 220 combines previous codes 220 and 230, 225 combines previous codes 225 and 235

(300) Office Facilities
310 Office
315 Office Service
350 Conference Room
355 Conference Room Service

(400) Study Facilities
410 Study Room
420 Stack
430 Open-Stack Study Room
440 Processing Room
455 Study Service

(500) Special Use Facilities
510 Armory
515 Armory Service
520 Athletic or Physical Education
523 Athletic Facilities Spectator Seating
525 Athletic or Physical Ed Service
530 Media Production
535 Media Production Service
540 Clinic
545 Clinic Service
550 Demonstration
555 Demonstration Service
560 Field Building
570 Animal Facilities
575 Animal Facilities Service
580 Greenhouse
585 Greenhouse Service
590 Other (All Purpose)

(600) General Use Facilities
610 Assembly
615 Assembly Service
620 Exhibition
625 Exhibition Service
630 Food Facility
635 Food Facility Service
640 Day Care
645 Day Care Service
650 Lounge
655 Lounge Service
660 Merchandising
665 Merchandising Service
670 Recreation
675 Recreation Service

680 Meeting Room
685 Meeting Room Service
Note: 640 Day Care and 645 Day Care Service added. 690 Locker Room deleted; reassign to 115,215,225,315 690 Locker Room deleted; reassign to 115,215,225,315 or other room service code.

(700) Support Facilities
710 Central Computer or Telecommunications
715 Central Computer or Telecommunications Service
720 Shop
725 Shop Service
730 Central Storage
735 Central Storage Service
740 Vehicle Storage
745 Vehicle Storage Service
750 Central Service
755 Central Service Support
760 Hazardous Materials Storage
770 Hazardous Waste Storage
775 Hazardous Waste Service
780 Unit Storage

(800) Health Care Facilities
810 Patient Bedroom
815 Patient Bedroom Service
820 Patient Bath
830 Nurse Station
835 Nurse Station Service
840 Surgery
845 Surgery Service
850 Treatment/Examination Clinic
855 Treatment/Examination Clinic Service
860 Diagnostic Service Laboratory
865 Diagnostic Service Lab Support
870 Central Supplies
880 Public Waiting
890 Staff On-Call Facility
895 Staff On-Call Facility Service
Note: Previous 895, Health Care Service deleted. Apply appropriate service code to primary room code.

(900) Residential Facilities
910 Sleep/Study w/o Toilet or Bath
919 Toilet or Bath
920 Sleep/Study w/Toilet or Bath
935 Sleep/Study Service
950 Apartment
955 Apartment Service
970 House

(000) Unclassified Facilities
050 Inactive Area
060 Alteration or Conversion Area
070 Unfinished Area

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-2: **Ivy Tech Community College – Columbus Campus Main Building Replacement**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Ivy Tech Community College – Columbus Campus Main Building Replacement

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

ITCC Columbus Campus Main Building Replacement

Ivy Tech Community College – Columbus Campus Main Building Replacement

STAFF ANALYSIS

The State Board of Trustees for Ivy Tech Community College request authorization to proceed with the replace the main building on their Columbus campus. The existing building is in need of significant infrastructure repairs including an HVAC system, roof, masonry, electrical and sanitary. Additionally, the building has become disjointed over time requiring significant structural work to bring similar programs together. The option of renovating was explored; however, the cost of a new building is comparable and will provides a layout that enhances student experience and collaboration, safer facilities for students and employees and allows for high wage, high demand program growth.

Funding: The estimated cost of this project is $32,879,000 and will be funded pursuant to HEA 1001-2019 and gift funds.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY

Institution:	Ivy Tech Community College	**Budget Agency Project No.:**	F-0-19-1-01
Campus:	Columbus	**Institutional Priority:**	1
Previously approved by General Assembly:	Yes	**Previously recommended by CHE:**	Yes
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	82600	GSF (1)	61226	ASF (2)	0.741234867 ASF/GSF
Net change in overall campus space:	0	GSF	4562	ASF	

Total cost of the project (3): $ 32,879,000

Cost per ASF/GSF: $ 398.05 GSF; $ 537.01 ASF

Funding Source(s) for project (4):

Amount	Type
$ 29,890,000	Fee-Replaced Debt
$ 2,989,000	Gift Funds

Estimated annual debt payment (6): 2199359

Are all funds for the project secured: No

Project Funding:

Indiana General Assembly- $29,890,000 and Fund raising- $2,989,900

Project Cost Justification

This existing building is over 37 years old and thus one of the oldest facilities in the Ivy Tech system that has not had a significant renovation. As such there are significant infrastructure issues including an old, inefficient HVAC system, an obsolete roof, and minimal daylighting due to small windows. In addition to these infrastructure issues, finishes are outdated and worn and the interior of the building has become disjointed over time requiring significant rework of the interior spaces to bring like programs together. A renovation option was explored, but due to the need for a complete HVAC replacement and the extensive nature of the building shell renovation, student relocation into temporary portables would be necessary. This would be disruptive and very costly putting the renovation cost closer to the level of new construction. Therefore, it was determined that construction of a new facility, to replace the existing, outdated facility would be the best option. With the new construction, the efficiency of the building will be greater through more energy efficient wall/roof systems, HVAC system, and LED lighting. In addition, the building can be organized around current teaching models and programmatic requirements, while building in flexibility for the future. It is anticipated there will be approximately $78K reduction in operating and maintenance expenditures. When completed, 32,000 of the 61,000 ASF will be academic space

Estimated annual change in cost of building operations based on the project: $ (78,000)

Estimated annual repair and rehabilitation investment (5): $ 448,350

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

Institution:	Ivy Tech Community College	**Budget Agency Project No.:**	F-0-19-1-01
Campus:	Columbus	**Institutional Priority:**	1

Description of Project

Poling Hall, built in 1982, is in need of major infrastructure repair to systems including HVAC, roof, masonry, electrical and sanitary. In addition to addressing the infrastructure issues with new and more efficient systems, the new constaruction will allow for the reorganization and consolidation of interior space to create discipline specific areas which are currently scattered throughout the building. This new layout will result in an enhanced student experience, safer facilities for employees and students, growth of programs focused on high demand, high wages, improved student life and increased collaboration among faculty and staff. A new building can be constructed on this site with minimal impact to campus operations. It is anticipated that a Renovation Option would require temporary classroom space during the duration of the project due to the extent of the system upgrades and would cost over $28.4M. The construction of a new facility could occur on the site without impacting the existing building at all and only minimally impacting parking. New construction is estimated to take approximately 16 months with an additional 2 months for demolition of the existing facility and reworking of the parking lot. It is estimated that new construction will cost approximately $29.9M, only 5% more than a renovation project but will reduce the negative impacts to students and employees. The College has established an XBE goal of 20% for the project.

Need and Purpose of the Program

In Fall of 2016, then Interim Chancellor Combs, reduced the Ivy Tech footprint by greater than 15,800ft by eliminating leases at three facilities (School of Business on Washington Street. Vickers Drive Admin Building and Red Oak Kitchen). The total SF of the new facility will not add any additional SF to the overall campus inventory, but will match the current SF of the existing building (80,470) and the maintenance building (2,130) combined. The realignment of spaces in the new construction will help to significantly enhance student success (attainment/completion) through improved access to student services to facilitate retention, and completion. Student success will improve through the consolidation of key student services directly off of the student commons, including: Express Enrollment, faculty offices, student life office, bookstore, and café. Student performance will be improved through a more modern building exterior that allows additional natural lighting into the facility. These essential facility components will address Ivy Tech standards and recommended learning models and consolidate and expand growing programs focused on high demand, high wage. It is clear that facilities impact student motivation and academic performance and the goal of this project is to help improve student recruitment, retention, and success.

Space Utilization

When completed, 32,000 of the 61,000 ASF will be academic space (53%) and 18,050 office (30%) compared to the existing building that is only 28,000 ASF of academic space (50%) and 18,000 office (32%). The reallocation of space was to address the growing need for health science and computer/networking/infomatics lab space to address these programs.

Comparable Projects

- List previous projects (can be your own institution or other institutions) that are similar to the project request. Note the size of the project, cost, and cost metrics (cost per GSF/ASF, cost per bed or classroom, etc). If similar projects are not available from other state public institutions, providing peer institutions outside of IN is recommended (mostly for auxiliary projects for example).

Background Materials

Attached file is a graphic of site plan

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR (INSERT PROJECT TITLE)

	Current Campus Totals				Capital Request		
(INSERT PROJECT TITLE AND SBA No.)	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)	Subtotal Current and Future Space	Space to be Terminated (1)	New Space in Capital Request	Net Future Space
A. OVERALL SPACE IN ASF	**8,065**	**0**	**0**	**8065**	**0**	**-234**	**7831**
Classroom (110 & 115)	**19,325**	-	**2,732**	**22,057**	-	**1,263**	**23,320**
Class Lab (210,215,220,225,230,235)	**947**	-	-	**947**	-	**165**	**1,112**
Non-class Lab (250 & 255)	**18,153**	-	-	**18,153**	-	**404**	**18,557**
Office Facilities (300)	-	-	-	-	-	-	-
Study Facilities (400)	-	-	-	-	-	-	-
Special Use Facilities (500)	**10,174**	-	-	**10,174**	-	**232**	**10,406**
General Use Facilities (600)	-	-	-	-	-	-	-
Support Facilities (700)	-	-	-	-	-	-	-
Health Care Facilities (800)	-	-	-	-	-	-	-
Resident Facilities (900)	-	-	-	-	-	-	-
Unclassified (000)				-			-
B. OTHER FACILITIES							
(Please list major categories)				-			-
TOTAL SPACE	**56,664**	-	**2,732**	**59,396**	-	**1,830**	**61,226**

CAPITAL PROJECT COST DETAILS

Institution:	Ivy Tech Community College	**Budget Agency Project No.:**	F-0-19-1-01
Campus:	Columbus	**Institutional Priority:**	1

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	March	2020
Start Construction	June	2020
Occupancy (End Date)	May	2022

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering	$ 1,220,000	$ -	**$ 1,220,000**
b. Architectural	$ 1,080,000		**$ 1,080,000**
c. Consulting			**$ -**
Construction			
a. Structure	$ 13,100,000	$ 1,630,000	**$ 14,730,000**
b. Mechanical (HVAC, plumbing, etc.)	$ 7,189,000	$ 650,000	**$ 7,839,000**
c. Electrical	$ 4,200,000	$ 460,000	**$ 4,660,000**
Movable Equipment	$ 2,000,000	$ -	**$ 2,000,000**
Fixed Equipment			**$ -**
Site Development/Land Acquisition	$ 1,100,000	$ 120,000	**$ 1,220,000**
Other (Plan Approvals, Surveys, Moving)	$ 130,000		**$ 130,000**
TOTAL ESTIMATED PROJECT COST	**$ 30,019,000**	**$ 2,860,000**	**$ 32,879,000**

CAPITAL PROJECT OPERATING COST DETAILS

FOR: (FOR EACH PROJECT FROM 2013-15 CAPITAL REQUEST SCHEDULE: EXCLUDE R&R)

Institution:	Ivy Tech Community College	**Budget Agency Project No.:**	F-0-19-1-01
Campus:	Columbus	**Institutional Priority:**	1

GSF OF AREA AFFECTED BY PROJECT 82600

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations		$ -		
2. Maintenance	-0.4116223	$ **(34,000)**	-34000	
3. Fuel		$ -		
4. Utilities	-0.5326877	$ **(44,000)**	-44000	
5. Other		$ -		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**-0.9443099**	$ **(78,000)**	$ **(78,000)**	$ -

Description of any unusual factors affecting operating and maintenance costs/savings.

Operational cost are expected to decrease with efficiencies in equipment and building envelop.

Total Operational Expenses for 2016-17 for the 80,470 SF facility is $419,289 ($5.21/GSF).

ROOM USE CATEGORIES

(100) Classroom Facilities
110 Classroom
115 Classroom Service

(200) Laboratory Facilities
210 Class Laboratory
215 Class Laboratory Service
220 Open Laboratory
225 Open Laboratory Service
250 Research/Non-class Laboratory
255 Research/Non-class Laboratory Service
Note: 220 combines previous codes 220 and 230, 225 combines previous codes 225 and 235

(300) Office Facilities
310 Office
315 Office Service
350 Conference Room
355 Conference Room Service

(400) Study Facilities
410 Study Room
420 Stack
430 Open-Stack Study Room
440 Processing Room
455 Study Service

(500) Special Use Facilities
510 Armory
515 Armory Service
520 Athletic or Physical Education
523 Athletic Facilities Spectator Seating
525 Athletic or Physical Ed Service
530 Media Production
535 Media Production Service
540 Clinic
545 Clinic Service
550 Demonstration
555 Demonstration Service
560 Field Building
570 Animal Facilities
575 Animal Facilities Service
580 Greenhouse
585 Greenhouse Service
590 Other (All Purpose)

(600) General Use Facilities
610 Assembly
615 Assembly Service
620 Exhibition
625 Exhibition Service
630 Food Facility
635 Food Facility Service
640 Day Care
645 Day Care Service
650 Lounge
655 Lounge Service
660 Merchandising
665 Merchandising Service
670 Recreation
675 Recreation Service

680 Meeting Room
685 Meeting Room Service
Note: 640 Day Care and 645 Day Care Service added. 690 Locker Room deleted; reassign to 115,215,225,315 690 Locker Room deleted; reassign to 115,215,225,315 or other room service code.

(700) Support Facilities
710 Central Computer or Telecommunications
715 Central Computer or Telecommunications Service
720 Shop
725 Shop Service
730 Central Storage
735 Central Storage Service
740 Vehicle Storage
745 Vehicle Storage Service
750 Central Service
755 Central Service Support
760 Hazardous Materials Storage
770 Hazardous Waste Storage
775 Hazardous Waste Service
780 Unit Storage

(800) Health Care Facilities
810 Patient Bedroom
815 Patient Bedroom Service
820 Patient Bath
830 Nurse Station
835 Nurse Station Service
840 Surgery
845 Surgery Service
850 Treatment/Examination Clinic
855 Treatment/Examination Clinic Service
860 Diagnostic Service Laboratory
865 Diagnostic Service Lab Support
870 Central Supplies
880 Public Waiting
890 Staff On-Call Facility
895 Staff On-Call Facility Service
Note: Previous 895, Health Care Service deleted. Apply appropriate service code to primary room code.

(900) Residential Facilities
910 Sleep/Study w/o Toilet or Bath
919 Toilet or Bath
920 Sleep/Study w/Toilet or Bath
935 Sleep/Study Service
950 Apartment
955 Apartment Service
970 House

(000) Unclassified Facilities
050 Inactive Area
060 Alteration or Conversion Area
070 Unfinished Area

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-3: **Indiana University Bloomington – Lilly Library Renovation**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Indiana University Bloomington – Lilly Library Renovation

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

Indiana University Lilly Library Renovation

Indiana University Bloomington – Lilly Library Renovation

STAFF ANALYSIS

The Trustees of Indiana University request authorization to proceed with renovation of the Lilly Library on the Bloomington campus. The 52,516 gross square foot facility is in need of renovations of its major building systems, including upgrades to the existing mechanical, lighting, plumbing and fire protection systems, as well as improvements in universal accessibility, technology, security systems and space configuration. These improvements will allow for the appropriate modern preservation and presentation of the library's collections while ensuring secure and efficient access for students, scholars, researchers, educators and other visitors.

Funding: The estimated cost of this project is $12,400,000 and will be funded with Operating Funds and a Lilly Endowment Grant.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY
LILLY LIBRARY RENOVATION

Institution: Indiana University
Campus: Bloomington

Budget Agency Project No.: A-1-19-2-16
Institutional Priority:

Previously approved by General Assembly:

Previously recommended by CHE:

Part of the Institution's Long-term Capital Plan:
20191119

Project Size: 52,516 GSF(1) | 37,632 ASF(2) | 72% ASF/GSF

Net change in overall campus space: GSF | 2,178 ASF

Total cost of the project (3): $ 12,400,000

Cost per ASF/GSF: $ 236 GSF; $ 330 ASF

Funding Source(s) for project (4):

Amount	Type	
$ 10,886,425	Gift Funds	Lilly Endowment Grant
$ 1,513,575	Operating Funds	IU Libraries

Estimated annual debt payment (6):

Are all funds for the project secured:

Project Funding:

The project will be funded through a grant from Lilly Endowment and operating funds from Indiana University Libraries.

Project Cost Justification

Comparable projects include the IUB Eskenazi Museum of Art Renovation (estimated at $251/gsf in 2016 dollars) and IUB Franklin Hall Academic Core Renovation (estimated at $152/gsf in 2013 dollars). Like the Eskenazi project, this project will update the building's mechanical systems and infrastructure, as well as technological equipment for exhibitions and instruction, and reconfigure some interior spaces. The Eskenazi Museum of Art and the Lilly Library are similar in function and need for expanded technological and mechanical systems to preserve their environmentally-sensitive collections. The Franklin Hall project renovated that building, which was the second library building for the Bloomington campus. Franklin Hall is similar to Lilly Library in that it was constructed as a library building with stack floors, which create renovation challenges in terms of accessibility and upgrades to infrastructure. The Franklin Hall project also replaced building systems.

Estimated annual change in cost of building operations based on the project:

Estimated annual repair and rehabilitation investment (5): $ -

(1) Gross Square Feet (GSF)- Sum of all area within the exterior envelope of the structure.

(2) Assignable Square Feet (ASF)- Amount of space that can be used by people or programs within the interior walls of a structure. Assignable square feet is the sum of the 10 major assignable space use categories: classrooms, laboratories, offices, study facilities, special use facilities, general use facilities, support facilities, health care facilities, residential facilities and unclassified facilities. For information on assignable space use categories, see Space-Room Codes tab.

(3) Projects should include all costs associated with the project (structure, A&E, infrastructure, consulting, FF&E, etc.)

(4) Be consistent in the naming of funds to be used for projects. If bonding, note Bonding Authority Year (1965, 1929, 1927, etc.)

(5) Estimate the amount of funding the institution would need to set aside annually to address R&R needs for the project. CHE suggests 1.5% of total construction cost

(6) If issuing debt, determine annual payment based on 20 years at 4.75% interest rate

- If project is a lease-purchase or lease, adjust accordingly. Note the total cost of the lease in the project cost, and annual payments in project description

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION
LILLY LIBRARY RENOVATION

Institution:	Indiana University	**Budget Agency Project No.:**	A-1-19-2-16
Campus:	Bloomington	**Institutional Priority:**	

Description of Project

This project will renovate the Lilly Library on the Bloomington campus, constructed in 1960. The 52,516-gross-square-foot facility is in need of renovations of its major building systems, including upgrades to the existing mechanical, lighting, plumbing and fire protection systems, as well as improvements in universal accessibility, technology, security systems and space configuration. These improvements will allow for the appropriate and modern preservation and presentation of the library's collections while ensuring secure and efficient access for students, scholars, researchers, educators and other visitors.

Relationship to Other Capital Improvement Projects: This project does not affect any other capital improvement projects.

Historical Significance: No historically significant buildings or structures will be affected by this project.

Alternatives Considered: Due to the nature of this project, no alternatives were considered.

Relationship to Long-Term Capital Plan for Indiana University: This project is included in the university's ten-year plan.

Need and Purpose of the Program

Long recognized as one of the nation's leading libraries housing rare books, manuscripts and sheets of music, the Lilly Library opened in 1960 to house the private book and manuscript collection of the late Josiah K. Lilly Jr. The Lilly Library now contains more than 450,000 rare books, 8.5 million manuscripts, and 150,000 sheets of music. Among the Lilly Library's most famous materials are the Gutenberg New Testament; the first printed edition of "The Canterbury Tales"; many beautifully illuminated medieval books of hours; the Boxer Codex, a unique 16th-century manuscript depiction of the people of the Philippines and Far East; and the personal archives of cultural luminaries such as Orson Welles, Sylvia Plath, Kurt Vonnegut Jr., and Ngũgĩ wa Thiong'o. The facility has not received a major interior renovation in its lifetime, and contains some of the original mechanical systems, with upgrades needed to ensure the appropriate use, storage, and continued preservation of the collection. This project also will convert a portion of existing mechanical space into a classroom to help address increasing demands for academic programming to be hosted on site.

Space Utilization

Upgrades to the building's mechanical systems will allow for a portion of current mechanical space to be converted to classroom space.

Comparable Projects

Comparable projects include the IUB Eskenazi Museum of Art Renovation (estimated at $251/gsf in 2016 dollars) and IUB Franklin Hall Academic Core Renovation (estimated at $152/gsf in 2013 dollars). Like the Eskenazi project, this project will update the building's mechanical systems and infrastructure, as well as technological equipment for exhibitions and instruction, and reconfigure some interior spaces. The Eskenazi Museum of Art and the Lilly Library are similar in function and need for expanded technological and mechanical systems to preserve their environmentally-sensitive collections. The Franklin Hall project renovated that building, which was the second library building for the Bloomington campus. Franklin Hall is similar to Lilly Library in that it was constructed as a library building with stack floors, which create renovation challenges in terms of accessibility and upgrades to infrastructure. The Franklin Hall project also replaced building systems.

Background Materials

This project was approved by the Indiana University Board of Trustees at the June 2019 meeting. The project will be funded through a grant from Lilly Endowment and operating funds from Indiana University Libraries.

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR LILLY LIBRARY RENOVATION

	Current Campus Totals				Capital Request		
LILLY LIBRARY RENOVATION A-1-19-2-16	**Current Space in Use (1)**	**Space Under Construction (2)**	**Space Planned and Funded (3)**	**Subtotal Current and Future Space**	**Space to be Terminated (4)**	**New Space in Capital Request**	**Net Future Space**
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	387,142	82,900	1,600	471,642	-	2,665	474,307
Class Lab (210,215,220,225,230,235)	466,682	33,103	35,000	534,785	-	-	534,785
Non-class Lab (250 & 255)	484,204	46,054	-	530,258	-	-	530,258
Office Facilities (300)	2,056,874	159,647	61,125	2,277,646	-	2,709	2,280,355
Study Facilities (400)	619,073	13,503	1,130	633,706	-	27,218	660,924
Special Use Facilities (500)	760,165	2,064	9,191	771,420	-	-	771,420
General Use Facilities (600)	1,254,554	79,122	60,294	1,393,970	-	5,040	1,399,010
Support Facilities (700)	1,122,392	52,837	114,985	1,290,214	-	-	1,290,214
Health Care Facilities (800)	26,837	10,808	-	37,645	-	-	37,645
Resident Facilities (900)	2,500,190	450,789	146,500	3,097,479	-	-	3,097,479
Unclassified (000)	168,582	1,616	-	170,198	-	-	170,198
B. OTHER FACILITIES							
(Please list major categories)	-	-	-	-	-	-	-
TOTAL SPACE	9,846,695	932,443	429,825	11,208,963	-	37,632	11,246,595

Notes:

(1) Figures reflect IUB total assignable sf

(2) Figures include Golf Course, 3551 asf; Regional Academic Health Center, 69,003 asf; Old Crescent Renovation Phase III, 295,052 asf ; Metz Carillon Renovation and Relocation, 300 asf; Renovation of Foster and McNutt Quadrangles, 351,589 asf; Teter Quad Mechanical Systems Replacement and Renovation, 200,142 asf; Wells Library Ground Floor and Accessibility Upgrades, 12,806 asf

(3) Figures include North Housing Addition, 182,000 asf; International Center, 24,646 asf; Indiana Memorial Union Dining Renovation, 25,632 asf Armstrong Stadium North Grandstand Replacement, 13,597 asf; Parking Garage/Office Building 183,950 asf

- Space/Room codes based on Postsecondary Ed Facilities Inventory and Classification Manual (2006)

CAPITAL PROJECT COST DETAILS
LILLY LIBRARY RENOVATION

Institution:	Indiana University	**Budget Agency Project No.:**	A-1-19-2-16
Campus:	Bloomington	**Institutional Priority:**	

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	January	2020
Start Construction	March	2020
Occupancy (End Date)	June	2021

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering	$ 289,200		$ 289,200
b. Architectural	$ 354,000		$ 354,000
c. Consulting			$ -
Construction			
a. Structure	$ 3,587,300		$ 3,587,300
b. Mechanical (HVAC, plumbing, etc.)	$ 3,658,400		$ 3,658,400
c. Electrical	$ 1,530,400		$ 1,530,400
Movable Equipment	$ 500,000		$ 500,000
Fixed Equipment	$ 230,000		$ 230,000
Site Development/Land Acquisition			$ -
Other (Contingency, Admin. & Legal Fees)	$ 2,250,700		$ 2,250,700
TOTAL ESTIMATED PROJECT COST	**$ 12,400,000**	**$ -**	**$ 12,400,000**

CAPITAL PROJECT OPERATING COST DETAILS
FOR: LILLY LIBRARY RENOVATION

Institution: Indiana University
Campus: Bloomington

Budget Agency Project No.: A-1-19-2-16
Institutional Priority:

GSF OF AREA AFFECTED BY PROJECT 52,516

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	$ -	$ -	$ -	$ -
2. Maintenance	$ -	$ -	$ -	$ -
3. Fuel	$ -	$ -	$ -	$ -
4. Utilities	$ -	$ -	$ -	$ -
5. Other	$ -	$ -	$ -	$ -
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**$ -**	**$ -**	**$ -**	**$ -**

Description of any unusual factors affecting operating and maintenance costs/savings.

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-4: **Purdue University – Engineering and Polytechnic Gateway**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Purdue University West Lafayette – Engineering and Polytechnic Gateway

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

Purdue Engineering and Polytechnic Gateway Building

Purdue University West Lafayette – Engineering and Polytechnic Gateway

STAFF ANALYSIS

The Purdue University Board of Trustees requests authorization to proceed with the planning, financing, construction and award of construction contracts for the Engineering and Polytechnic Gateway building on the West Lafayette Campus. The project will construct a new, 255,000 gross square foot facility to support increased enrollment in both the College of Engineering and the Polytechnic Institute by providing instructional space, teaching labs, design studios, research space and collaborative space. The existing Nuclear Engineering Building and Michael Golden Engineering Laboratories and Shops will be demolished to make way for the new building.

Funding: The estimated cost of this project is $140,000,000. Of the total cost, $60,000,000 will be funded pursuant to HEA 1001-2019; $74,034,070 will be funded from gift funds; and $5,965,930 will be funded from operating funds – reserves.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY

Engineering and Polytechnic Gateway Building

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-19-1-08A
Campus:	West Lafayette	**Institutional Priority:**	One
Previously approved by General Assembly:	Yes	**Previously recommended by CHE:**	Yes
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	255,000	GSF (1)	144,685	ASF (2)	0.567392157 ASF/GSF
Net change in overall campus space:	149,640	GSF	81,500	ASF	

Total cost of the project (3):	$ 140,000,000	**Cost per ASF/GSF:**	549.01961 GSF
Total cost of the demolition:	$ -		967.61931 ASF

Funding Source(s) for project (4):	Amount	Type
	$ 60,000,000	Fee Replaced Debt
	$ 74,034,070	Gift Funds
	$ 5,965,930	Operating Funds-Reserves

Estimated annual debt payment (6):	$4,414,905
Are all funds for the project secured:	No

Project Funding:

A portion of funding was provided by the state through Fee-Replaced Debt, and the remainder will come from Gift Funds and Operating Funds-Reserves. Unsecured Gift Funds will be back-stopped by Operating Funds-Reserves.

Project Cost Justification

This project is similar to the project listed in the comparable project section though it is larger.

Estimated annual change in cost of building operations based on the project:	$ 842,111
Estimated annual repair and rehabilitation investment (5):	$ 2,100,000

(1) Gross Square Feet (GSF)- Sum of all area within the exterior envelope of the structure.

(2) Assignable Square Feet (ASF)- Amount of space that can be used by people or programs within the interior walls of a structure. Assignable square feet is the sum of the 10 major assignable space use categories: classrooms, laboratories, offices, study facilities, special use facilities, general use facilities, support facilities, health care facilities, residential facilities and unclassified facilities. For information on assignable space use categories, see Space-Room Codes tab.

(3) Projects should include all costs associated with the project (structure, A&E, infrastructure, consulting, FF&E, etc.)

(4) Be consistent in the naming of funds to be used for projects. If bonding, note Bonding Authority Year (1965, 1929, 1927, etc.)

(5) Estimate the amount of funding the institution would need to set aside annually to address R&R needs for the project. CHE suggests 1.5% of total construction cost

(6) If issuing debt, determine annual payment based on 20 years at 4.75% interest rate

- If project is a lease-purchase or lease, adjust accordingly. Note the total cost of the lease in the project cost, and annual payments in project description

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

Engineering and Polytechnic Gateway Building

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-19-1-08A
Campus:	West Lafayette	**Institutional Priority**:	One

Description of Project

The Engineering and Polytechnic Gateway facility will be a 255,000 GSF facility located where Nuclear Engineering and Michael Golden Engineering Laboratories and Shops stand today. This project was originally envisioned as two phases. A recent pledge of donor funding will allow both phases to commence as one project.

Serving both the College of Engineering and the Polytechnic Institute, the building will act as a new entrance/gateway to Purdue's academic campus and provide an eastern terminus to the student success corridor (which runs along Third Street from Horticulture Park to Grant Street), consistent with Purdue's new campus master plan.

Instructional laboratories, classrooms research space and collaborative spaces will be included with the goal of maximizing shared spaces between the two colleges with collaborative inter-disciplinary opportunities.

The College of Engineering is planning to house the following programs in the Gateway Building: First Year Engineering ,Office of Future Engineers, Industrial Engineering, Nuclear Engineering, and the following student success programs:

- Women in Engineering Program
- Minority Engineering Program
- Office of Engineering Student Success
- Global Engineering Programs and Partnerships
- Engineering Honors Program
- Engineering Undergraduate Research Office
- Office of Professional Practice
- Student Organizations

The Polytechnic Institute is planning to house a variety of instructional spaces, teaching labs and faculty/administrative offices for the School of Engineering Technology, the School of Construction Management Technology, Computer Information Technology, Computer Graphics Technology, as well as academic advising space and the Office of Student Recruiting, Retention and Diversity.

Need and Purpose of the Program

The Engineering and Polytechnic Gateway facility will accommodate enrollment growth in both the College of Engineering and the Polytechnic Institute. Completion of the building will result in an increase in the quality and quantity of instructional lab space for multiple departments.

Additionally, the new building will incorporate digital infrastructure to expand the on-campus learning environment to the online world, allowing for growth in online course offerings and the creation of virtual laboratories.

Space Utilization

The Nuclear Engineering Building and Michael Golden Laboratories and Shops currently occupy the proposed site for the Gateway Building. Nuclear Engineering is a one-level 1950s building with a 16,300 square foot footprint. Michael Golden Laboratories and Shops is a two-level building built in 1910 with a 43,000 square foot footprint. Michael Golden Laboratories and Nuclear Engineering will be demolished as part of this project.

Comparable Projects

The STEM Teaching Lab Facility (approved in 2018) is a student-focused laboratory building that consists primarily of wet and dry teaching laboratories and support space and also inlcudes collaboration space and some common areas. The STEM facility has a slightly higher costs per square feet due to a higher concentration of lab space.

- $64,000,000
- 111,344 GSF / 62,891 ASF
- $575/GSF; $1,017/ASF

Background Materials

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR Engineering and Polytechnic Gateway Building

	Current Campus Totals				Capital Request		
(INSERT PROJECT TITLE AND SBA No.)	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)	Subtotal Current and Future Space	Space to be Terminated (1)	New Space in Capital Request (2)	Net Future Space
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	331,337	-	-	**331,337**			**331,337**
Class Lab (210,215,220,225,230,235)	618,037	56,497	-	**674,534**	23,982	**92,500**	**743,052**
Non-class Lab (250 & 255)	1,611,875	7,701	-	**1,619,576**	27,788	9,825	**1,601,613**
Office Facilities (300)	2,249,946	8,324	4,177	**2,262,447**	9,962	34,670	**2,287,155**
Study Facilities (400)	400,281	12,918	-	**413,199**	1,319	7,490	**419,370**
Special Use Facilities (500)	1,215,997	4,493	-	**1,220,490**			**1,220,490**
General Use Facilities (600)	926,226	44,900	-	**971,126**		200	**971,326**
Support Facilities (700)	3,011,944	-	-	**3,011,944**	134		**3,011,810**
Health Care Facilities (800)	88,753	-	89,901	**178,654**			**178,654**
Resident Facilities (900)	2,570,466	175,550	-	**2,746,016**			**2,746,016**
Unclassified (000)	31,815	-	-	**31,815**			**31,815**
							-
B. OTHER FACILITIES							-
(Please list major categories)							-
TOTAL SPACE	**13,056,677**	**310,383**	**94,078**	**13,461,138**	**63,185**	**144,685**	**13,542,638**

Notes:

(1) Identify in a footnote the specific facilities that are included in the data in these columns. Do not include pending approval, non-submitted projects or non-funded projects

- Space/Room codes based on Postsecondary Ed Facilities Inventory and Classification Manual (2006)

Space under construction includes: MJIS Addition, STEM Teaching Lab Facility, ABE Renovation/Addition, Meredith South, Third Street North

Space planned and funded includes: Vet Med Teaching Hospital

Space to be terminated includes: MGL and NUCL

CAPITAL PROJECT COST DETAILS

Engineering and Polytechnic Gateway Building

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-19-1-08A
Campus:	West Lafayette	**Institutional Priority:**	One

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	March	2020
Start Construction	March	2020
Occupancy (End Date)	December	2022

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering			$ 4,430,000
b. Architectural			$ 5,765,000
c. Consulting			$ 591,000
Construction			
a. Structure			$ 67,189,000
b. Mechanical (HVAC, plumbing, etc.)			$ 29,575,000
c. Electrical			$ 23,275,000
Movable Equipment			$ 4,812,500
Fixed Equipment			$ 875,000
Site Development/Land Acquisition			N/A
Other (Material Testing, PM Fees, Relocation)			$ 3,487,500
TOTAL ESTIMATED PROJECT COST	**$ -**	**$ -**	$ 140,000,000

(1) Cost Basis is based on current cost prevailing as of: (INSERT MONTH AND YEAR)

(2) Explain in the Description of Project Section of the "Cap Proj Details" schedule the reasoning for estimated escalation factors

CAPITAL PROJECT OPERATING COST DETAILS

Engineering and Polytechnic Gateway Building

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-19-1-08A
Campus:	West Lafayette	**Institutional Priority:**	One

GSF OF AREA AFFECTED BY PROJECT 149,640

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	2.25	**$ 336,863**	298,631	38,231
2. Maintenance	1.64	**$ 245,630**	194,121	51,508
3. Fuel	-	**$ -**		
4. Utilities	1.73	**$ 259,619**		259,619
5. Other	-	**$ -**		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**5.63**	**$ 842,111**	**$ 492,753**	**$ 349,359**

Description of any unusual factors affecting operating and maintenance costs/savings.

(1) Based on figures from "Individual Cap Proj Desc" schedule

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-5: **Purdue University – Veterinary Medicine Teaching Hospital**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Purdue University West Lafayette – Veterinary Medicine Teaching Hospital

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

Purdue Veterinary Medicine Teaching Hospital

Purdue University West Lafayette – Veterinary Medicine Teaching Hospital

STAFF ANALYSIS

The Purdue University Board of Trustees requests authorization to proceed with the planning, financing, construction and award of construction contracts for the Veterinary Medicine Teaching Hospital at the Purdue West Lafayette campus. The new hospital will consist of equine, small animal and farm animal hospitals, totaling approximately 164,500 gross square feet. The facility will meet the standards of accreditation by the American Veterinary Medical Association Council on Education and provide state-of-the-art teaching environments while accommodating larger class sizes and caseloads.

Funding: The estimated cost of this project is $108,000,000. Of the total project cost, $73,000,000 will be funded pursuant to HEA 1001-2019; $26,832,506 will be funded from operating funds – reserves; and $8,167,494 will be funded from gift funds.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY

Veterinary Medicine Teaching Hospital

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-20-1-02
Campus:	West Lafayette	**Institutional Priority:**	N/A
Previously approved by General Assembly:	Yes	**Previously recommended by CHE:**	Yes
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	164,500	GSF (1)	94,078	ASF (2)	0.571902736 ASF/GSF
Net change in overall campus space:	164,500	GSF	94,078	ASF	

Total cost of the project (3):	$ 108,000,000	**Cost per ASF/GSF:**	656.53495 GSF
Total cost of the demolition:	$ -		1147.9836 ASF

Funding Source(s) for project (4):	Amount	Type
	$ 73,000,000	Fee-Replaced Debt
	$ 26,832,506	Operating Funds - Reserves
	$ 8,167,494	Gift Funds

Estimated annual debt payment (6): $5,371,468

Are all funds for the project secured: Yes

Project Funding:

Project funding will come from Fee-Replaced Debt, Operating Funds-Reserves and Gift Funds. Unsecured Gift Funds will be backstopped by the College of Veterinary Medicine.

Project Cost Justification

This project costs more than the one included in the comparable project section, and that is due to the differing project scopes and building types.

Estimated annual change in cost of building operations based on the project: $ 1,427,220

Estimated annual repair and rehabilitation investment (5): $ 1,620,000

(1) Gross Square Feet (GSF)- Sum of all area within the exterior envelope of the structure.

(2) Assignable Square Feet (ASF)- Amount of space that can be used by people or programs within the interior walls of a structure. Assignable square feet is the sum of the 10 major assignable space use categories: classrooms, laboratories, offices, study facilities, special use facilities, general use facilities, support facilities, health care facilities, residential facilities and unclassified facilities. For information on assignable space use categories, see Space-Room Codes tab.

(3) Projects should include all costs associated with the project (structure, A&E, infrastructure, consulting, FF&E, etc.)

(4) Be consistent in the naming of funds to be used for projects. If bonding, note Bonding Authority Year (1965, 1929, 1927, etc.)

(5) Estimate the amount of funding the institution would need to set aside annually to address R&R needs for the project. CHE suggests 1.5% of total construction cost

(6) If issuing debt, determine annual payment based on 20 years at 4.75% interest rate

- If project is a lease-purchase or lease, adjust accordingly. Note the total cost of the lease in the project cost, and annual payments in project description

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

Veterinary Medicine Teaching Hospital

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-20-1-02
Campus:	West Lafayette	**Institutional Priority**:	N/A

Description of Project

This project will construct a new 164,500 GSF Veterinary Medicine Teaching Hospital complex that consists of a 78,500 GSF equine hospital, a 62,000 GSF small animal hospital and a 24,000 GSF farm animal hospital.

The facility will be located on the south end of the West Lafayette campus adjacent to the existing Lynn Hall of Veterinary Medicine, which will continue to be occupied by the College of Veterinary Medicine upon completion of the new facilities.

The new hospitals will house receiving, waiting rooms, exam rooms, surgery, anesthesia, radiology, cardiology, physiology, physical therapy, internal medicine, ophthalmology, soft tissue, orthopedics, intensive care unit, intermediate care, therio, recovery and supply space.

Need and Purpose of the Program

The Purdue University College of Veterinary Medicine (PVM) is the only veterinary college in the state of Indiana and is one of only four veterinary colleges in the United States that educates the entire veterinary team.

The most recent American Veterinary Medical Association Council on Education (AVMA COE) accreditation visit in October 2018 was increasingly critical of the college for the poor quality of the facilities for teaching and clinical functions. Inadequacies in the college's ability to provide appropriate safety or biosecurity and teaching in hospital space approaching 60 years old have been noted on multiple occasions.

The new Veterinary Medicine Teaching Hospital will meet the standards of accreditation by the American Veterinary Medical Association Council on Education, provide state-of-the-art facilities and teaching environments and have the capability to remain adaptive to technology advancements in veterinary medicine.

The new facilities provide the opportunity for an increased class size (from 84 to 120), caseload growth, greater teaching opportunities and additional clinical revenue for hospital operation.

Space Utilization

Upon completion of the new facilities, some large animal and small animal functions will remain in the Lynn Hall of Veterinary Medicine. The remainder of the space will either be renovated or demolished in the future

Comparable Projects

- There are no directly comparable projects in the Purdue University system. The project below has some correlations but also key differences.
  - Centaur Regional Equine Diagnostic and Surgical Center (2015)
    - 19,000 square feet
      - Smaller and differing architectural style than the West Lafayette campus
    - $8.8M
    - Located in Shelbyville, IN convenient to Indiana Downs to administer emergency medical services to equines (surgery, diagnostic imaging, internal medicine, etc.)
      - The equine center is comparable to an urgent care while the new Veterinary Medical Teaching Hospital is truly a hospital

Background Materials

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR Veterinary Medicine Teaching Hospital

	Current Campus Totals				Capital Request		
(INSERT PROJECT TITLE AND SBA No.)	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)	Subtotal Current and Future Space	Space to be Terminated (1)	New Space in Capital Request (2)	Net Future Space
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	331,337	-	-	**331,337**			**331,337**
Class Lab (210,215,220,225,230,235)	618,037	56,497	68,518	**743,052**			**743,052**
Non-class Lab (250 & 255)	1,611,875	7,701	(17,963)	**1,601,613**			**1,601,613**
Office Facilities (300)	2,249,946	8,324	24,708	**2,282,978**		4,177	**2,287,155**
Study Facilities (400)	400,281	12,918	6,171	**419,370**			**419,370**
Special Use Facilities (500)	1,215,997	4,493	-	**1,220,490**			**1,220,490**
General Use Facilities (600)	926,226	44,900	200	**971,326**			**971,326**
Support Facilities (700)	3,011,944	-	(134)	**3,011,810**			**3,011,810**
Health Care Facilities (800)	88,753	-	-	**88,753**		89,901	**178,654**
Resident Facilities (900)	2,570,466	175,550	-	**2,746,016**			**2,746,016**
Unclassified (000)	31,815	-	-	**31,815**			**31,815**
B. OTHER FACILITIES (Please list major categories)				-			-
TOTAL SPACE	**13,056,677**	**310,383**	**81,500**	**13,448,560**	**-**	**94,078**	**13,542,638**

Notes:

(1) Identify in a footnote the specific facilities that are included in the data in these columns. Do not include pending approval, non-submitted projects or non-funded projects

- Space/Room codes based on Postsecondary Ed Facilities Inventory and Classification Manual (2006)

Space under construction includes: MJIS Addition, STEM Teaching Lab Facility, ABE Renovation/Addition, Meredith South, Third Street North

Space planned and funded includes: Engineering and Polytechnic Gateway Building

CAPITAL PROJECT COST DETAILS

Veterinary Medicine Teaching Hospital

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-20-1-02
Campus:	West Lafayette	**Institutional Priority:**	N/A

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	January	2020
Start Construction	March	2020
Occupancy (End Date)	March	2022

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering			$ 4,627,575
b. Architectural			$ 5,141,750
c. Consulting			$ 514,175
Construction			
a. Structure			$ 44,090,284
b. Mechanical (HVAC, plumbing, etc.)			$ 20,041,038
c. Electrical			$ 16,032,831
Movable Equipment			$ 1,600,000
Fixed Equipment			$ 450,000
Site Development/Land Acquisition			$ 9,800,000
Other (Project Management, IT, Insurance, Etc.)			$ 5,702,347
TOTAL ESTIMATED PROJECT COST	**$ -**	**$ -**	**$ 108,000,000**

CAPITAL PROJECT OPERATING COST DETAILS

Veterinary Medicine Teaching Hospital

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-20-1-02
Campus:	West Lafayette	**Institutional Priority**:	N/A

GSF OF AREA AFFECTED BY PROJECT 164,500

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	0.98	**161,947.04**	152,182.70	9,764.35
2. Maintenance	3.29	**541,537.78**	427,977.99	113,559.79
3. Fuel	-			
4. Utilities	4.40	**723,735.00**	102,639.00	621,096.00
5. Other	-			
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**8.68**	**1,427,220**	**682,800**	**744,420**

Description of any unusual factors affecting operating and maintenance costs/savings.

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM C-6: **Vincennes University – Campus Infrastructure Project**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following project:

- Vincennes University – Campus Infrastructure Project

Background

By statute, the Commission for Higher Education must review all projects to construct buildings or facilities costing more than two million dollars ($2,000,000), regardless of the source of funding. Each repair and rehabilitation project must be reviewed by the Commission for Higher Education and approved by the Governor, on recommendation of the Budget Agency, if the cost of the project exceeds two million dollars ($2,000,000) and if any part of the cost of the project is paid by state appropriated funds or by mandatory student fees assessed all students. Such review is required if no part of the project is paid by state appropriated funds or by mandatory student fees and the project cost exceeds two million dollars ($2,000,000). A project that has been approved or authorized by the General Assembly is subject to review by the Commission for Higher Education. The Commission for Higher Education shall review a project approved or authorized by the General Assembly for which a state appropriation will be used. All other non-state funded projects must be reviewed within ninety (90) days after the project is submitted to the Commission.

Supporting Document

VU Campus Infrastructure Project

Vincennes University – Campus Infrastructure Project

STAFF ANALYSIS

The Vincennes University Board of Trustees requests authorization to proceed with the campus infrastructure project. This project consists of mechanical upgrades as well as replacement of the campus electrical substation and related infrastructure. The electrical substation can no longer support the University's energy demands and recent power outages have not only effected the main campus but also disrupted support services to sites across Indiana and the nation. The project will replace the existing substation and ensure that VU has a sufficient power source to meet the electrical needs of the campus well into the future. Additionally, the mechanical upgrades will allow for the replacement of HVAC systems that have exceeded their lifecycle and are significantly unreliable, inefficient and resulting in poor air quality. Other investments to the facilities include repairing water infiltration issues, installation of new windows, ADA accessibility improvements and LED upgrades.

Funding: The estimated cost of this project is $22,300,000 and will be funded pursuant to HEA 1001-2019 with a cash appropriation.

Additional Staff Notes: Staff recommends approval of the project.

PROJECT COST SUMMARY

CAMPUS ELECTRICAL SUBSTATION AND RELATED INFRASTRUCTURE

Institution:	Vincennes University	**Budget Agency Project No.:**	E-1-19-2-01
Campus:	Vincennes	**Institutional Priority:**	1
Previously approved by General Assembly:	Yes	**Previously recommended by CHE:**	Yes
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size: N/A GSF (1) N/A ASF (2) N/A ASF/GSF

Net change in overall campus space: N/A GSF N/A ASF

Total cost of the project (3): $ 12,000,000

Cost per ASF/GSF: N/A GSF; N/A ASF

Funding Source(s) for project (4):

Amount	Type	
$ 12,000,000	Capital Cash Appropriation	As approved in the 2019-2021 State Budget

Estimated annual debt payment (6): N/A

Are all funds for the project secured: N/A

Project Funding:

Funding for this project is being requested as a capital cash appropriation from the State of Indiana.

Project Cost Justification

The project cost is based on the cost of the two substations obtained from Duke Energy (Vincennes University's energy provider) and an estimate of the cost of connecting the substation to Vincennes University's existing electrical infrastructure. Adequate electrical energy is vital to the operation of a comprehensive University offering educational programming and community services. This project is designed to meet the expanding electrical needs of the Vincennes campus well into the future.

Estimated annual change in cost of building operations based on the project: $ - 0 -

Estimated annual repair and rehabilitation investment (5): $ - 0 -

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

CAMPUS ELECTRICAL SUBSTATION AND RELATED INFRASTRUCTURE

Institution:	**Vincennes University**	**Budget Agency Project No.:**	**E-1-19-2-01**
Campus:	**Vincennes**	**Institutional Priority:**	**1**

Description of Project

Vincennes University has recently experienced significant interruptions in power service that have caused great concern about the reliability of our electrical infrastructure. These power outages not only effect the Vincennes campus but also disrupt support services to our sites all across Indiana and the nation. With a recent outage lasting nearly a week, these interruptions in service are a serious issue for the safety and education of the Vincennes University community. According to Duke Energy, the current substation simply can no longer support the University's energy demands. The existing substation will be replaced to ensure reliable power distribution throughout campus. Additionally, a new substation will also be installed to provide an additional source of power and support future growth. All associated connections, switches, and recircuiting will be installed to fully integrate the substations into the existing University's electrical infrastructure. This project will:

A. Provide an overall electrical solution for Vincennes University. This will allow the University more control in selecting project options such as additional equipment and the size of equipment. Because of the significant loads that will be placed on the substation, VU will install a 2,000 amp switchgear rather than the typical 1,200 amp switchgear. This will enable the University to meet future demands and eliminate reliability issues.

B. Provide better reliability of electrical service. In the event that a piece of equipment on the primary substation should fail, the second substation will be available to ensure continuity of service.

C. Offer a long-term growth solution for the campus as the additional substation will be located in close proximity to the University's load center for circuit tie-ins and future growth areas.

D. Include an upgraded bank which will have the capacity to serve building loads associated with high-demand facilities such as the Center for Science, Engineering and Mathematics and the Red Skelton Performing Arts Center, as well as the additional energy loads created by the high-tech training equipment located throughout the campus. The Indiana Center for Applied Technology and the VU Technology Building house cutting-edge robotics and CNC training equipment. This state-of-the-art equipment requires significant electrical usage to train students for the advanced manufacturing industry - the backbone of Indiana's economy.

E. Add a mobile substation to campus (in the event it is needed).

F. Include a transformer bank that can be easily upgraded in the future because of the substation's standard design.

Need and Purpose of the Program

Adequate and reliable electricity are vital to the education of our students. VU's power outages over the past year have been extremely detrimental to our students and staff. The current substation simply cannot support VU's current energy demands and its capacity will certainly be exceeded with any additional buildings or expansion of the campus. The overload would result in system failures and greatly impact electrical service to the University. The new substations are consistent with the University's Master Plan encompassing existing and future energy needs. Not only will more electrical power be needed to heat, cool and provide light to existing and future educational facilities, there is also an ever-increasing demand to operate instructional equipment in these campus facilities. The Vincennes campus includes over 4,000 personal computers in classrooms, labs, and the library as well as highly technical equipment in VU's career and technical education labs - including robotics and advanced manufacturing training equipment. This project is designed to meet the electrical needs of the Vincennes campus well into the future.

Space Utilization

No additional square footage will be added to the campus.

Comparable Projects

Although Vincennes University has not recently completed a project of this type, the cost of the project is based on information obtained from Duke Energy, along with an additional estimate of the costs associated with tying the substations to Vincennes Universty's existing electrical infrastructure.

Background Materials

See the attached campus map showing the location of the additional electrical substation.

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR:

CAMPUS ELECTRICAL SUBSTATION AND RELATED INFRASTRUCTURE

Form Not Applicable

	Current Campus Totals				Capital Request		
CAMPUS ELECTRICAL SUBSTATION E-1-19-2-01	**Current Space in Use**	**Space Under Construction (1)**	**Space Planned and Funded (1)**	**Subtotal Current and Future Space**	**Space to be Terminated (1)**	**New Space in Capital Request (2)**	**Net Future Space**
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)				-			-
Class Lab (210,215,220,225,230,235)				-			-
Non-class Lab (250 & 255)				-			-
Office Facilities (300)				-			-
Study Facilities (400)				-			-
Special Use Facilities (500)				-			-
General Use Facilities (600)				-			-
Support Facilities (700)				-			-
Health Care Facilities (800)				-			-
Resident Facilities (900)				-			-
Unclassified (000)				-			-
B. OTHER FACILITIES							
(Please list major categories)				-			-
TOTAL SPACE	-	-	-	-	-	-	-

CAPITAL PROJECT COST DETAILS

CAMPUS ELECTRICAL SUBSTATION AND RELATED INFRASTRUCTURE

Institution:	**Vincennes University**		**Budget Agency Project No.:**		**E-1-19-2-01**
Campus:	**Vincennes**		**Institutional Priority:**	**1**	

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	August	2019
Start Construction	October	2019
Occupancy (End Date)	December	2019

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors	Project Cost
Planning Costs			
a. Engineering	$ 300,000		**$ 300,000**
b. Architectural			**$ -**
c. Consulting	$ 75,000		**$ 75,000**
Construction			
a. Structure			**$ -**
b. Mechanical (HVAC, plumbing, etc.)			**$ -**
c. Electrical	$ 11,625,000		**$ 11,625,000**
Movable Equipment			**$ -**
Fixed Equipment			**$ -**
Site Development/Land Acquisition			**$ -**
Other (Please list)			**$ -**
TOTAL ESTIMATED PROJECT COST	**$ 12,000,000**	**$ -**	**$ 12,000,000**

(1) Cost Basis is based on current cost prevailing as of: (June 2018)

CAPITAL PROJECT OPERATING COST DETAILS
CAMPUS ELECTRICAL SUBSTATION AND RELATED INFRASTRUCTURE

Institution:	**Vincennes University**	**Budget Agency Project No.:**	**E-1-19-2-01**
Campus:	**Vincennes**	**Institutional Priority:**	**1**

GSF OF AREA AFFECTED BY PROJECT

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations		$ -		
2. Maintenance		$ -		
3. Fuel		$ -		
4. Utilities		$ -		
5. Other		$ -		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS		**$ -**	**$ -**	**$ -**

Description of any unusual factors affecting operating and maintenance costs/savings.

Although no direct cost savings will occur, the substation will ensure continuity of electricty and reduce or eliminate system failures which would prove extremely expensive for the University.

PROJECT COST SUMMARY

MECHANICAL UPGRADES PROJECT
HUMANITIES AND SUMMERS CENTERS

Institution:	Vincennes University	**Budget Agency Project No.:**	E-1-19-2-02
Campus:	Vincennes	**Institutional Priority:**	1
Previously approved by General Assembly:	Yes	**Previously recommended by CHE:**	Yes
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	146,904	GSF	89,655	ASF	0.61 ASF/GSF
Net change in overall campus space:	0	GSF	0	ASF	

Total cost of the project (3): $ 10,300,000

Cost per ASF/GSF: $ 70 GSF; $ 115 ASF

Funding Source(s) for project (4):

Amount	Type	
$ 10,300,000	Capital Cash Appropriation	As approved in the 2019-2021 State Budget

Estimated annual debt payment (6): N/A

Are all funds for the project secured: N/A

Project Funding:

Funding for this project is being requested as a capital cash appropriation from the State of Indiana.

Project Cost Justification

Vincennes University has completed similar projects in recent years that have provided comparable cost information to the proposed project. The renovation of the 33,716 square foot Homeland Security Building was completed in 2012 at a cost of $2,372,000 ($70 per square foot). Additionally, the 90,922 square foot Aviation Technology Center Renovation was completed in 2015 at a cost of $6,000,000 ($66 per square foot). Both projects were similar in scope to the proposed project. This project is expected to improve energy efficiency and provide a cost savings of approximately $24,000 annually.

Estimated annual change in cost of building operations based on the project: $ (24,000)

Estimated annual repair and rehabilitation investment (5): $ - 0 -

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

MECHANICAL UPGRADES PROJECT
HUMANITIES AND SUMMERS CENTERS

Institution:	**Vincennes University**	**Budget Agency Project No.:**	**E-1-19-2-02**
Campus:	**Vincennes**	**Institutional Priority:**	**1**

Description of Project

Vincennes University remains committed to providing a quality academic environment for its students and staff. The Mechanical Upgrades Project is a sound investment in the future of VU's Shircliff Humanities Center and Phillip M. Summers Center. Adequate mechanical and electrical systems are critical to the operation of any campus facility and both facilities currently have HVAC systems that have exceeded their lifecycle and are significantly unreliable, inefficient and resulting in poor air quality. Additionally, both facilities have significant interior and exterior deterioration including water infiltration issues. The Mechanical Upgrades Project is a continuation of Vincennes University's commitment to improving energy efficiency while providing students a safe and effective instructional space.

Vincennes University's 111,681 gross square-foot Shircliff Humanities Center was constructed in 1970 with a major addition in 1991. The building houses a variety of classrooms, educational space and offices for the College of Humanities. This facility serves nearly every student on a daily basis with many high-enrollment, general education courses offered throughout the building. The renovation of the building will include a complete upgrade of the electrical and HVAC systems, as well as upgrades to building components to ensure they meet compliance standards. The renovation will include:

A. Upgrading the HVAC system.

B. Updating the electrical and communications infrastructure.

C. Upgrading lights to LED to improve the educational environment and energy efficiency.

D. Updating building components for ADA accessibility (specifically in the restrooms and auditorium).

E. Repairing water infiltration issues in the lower level.

F. Repairing settling issues where walls have pulled away from the slab.

G. Interior upgrades (specifically flooring and ceiling) for educational improvements and modifications needed to accommodate the HVAC system upgrade.

Vincennes University's Phillip M. Summers Center was constructed in 1992 and houses the College of Social Science, Performing Arts and Communication. Like the Shircliff Humanities Center, this facility also has significant interior and exterior deterioration and an inefficient HVAC system. The complete renovation of this facility will provide more reliable electrical and mechanical systems and better air quality. The renovation will include:

A. Upgrading the HVAC and electrical systems.

B. Upgrading the lights to LED to improve the educational environment and energy efficiency.

C. Installation of new windows.

D. Repairs to the exterior brick façade.

E. Upgrade to interior finishes.

Need and Purpose of the Program

The HVAC system in the Shircliff Humanities Center has reached the end of its expected lifecycle, has poor dehumidification properties and is not energy efficient. The structure of the building has settled, causing cracks to show through the finishes and the outside wall to pull away slightly from the slab. The interior of the building has serious deterioration - particularly with the original flooring, ceiling and lighting - and is in need of upgrades and modifications to maximize its effectiveness for education. Other areas of the interior, such as the auditorium and the restrooms, need upgraded to meet ADA and other building compliance standards. The building's lower levels are also showing deterioration as well as water and air infiltration issues. The Phillip M. Summers Center is showing significant interior and exterior deterioration. The HVAC system has also reached the end of its lifecycle and the windows and exterior facade are showing signs of water infiltration. In addition, the electrical lights and much of the building's infrastructure are outdated and inefficient.

Space Utilization

This project will not add any additional square footage to the campus.

Comparable Projects

Vincennes University has completed similar projects in recent years that have provided comparable cost information to the proposed project. The renovation of the 33,716 square foot Homeland Security Building was completed in 2012 at a cost of $2,372,000 ($70 per square foot). Additionally, the 90,922 square foot Aviation Technology Center Renovation was completed in 2015 at a cost of $6,000,000 ($66 per square foot). Both projects were similar in scope to the proposed project. This project is expected to improve energy efficiency and provide a cost savings of approximately $24,000 annually.

Background Materials

See attached images and floor plans outlining existing conditions and general scope.

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR:

MECHANICAL UPGRADES PROJECT
HUMANITIES AND SUMMERS CENTERS

	Current Campus Totals				Capital Request		
MECHANICAL UPGRADES PROJECT E-1-19-2-02	**Current Space in Use**	**Space Under Construction**	**Space Planned and Funded**	**Subtotal Current and Future Space**	**Space to be Terminated**	**New Space in Capital Request**	**Net Future Space**
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	31,257			**31,257**			**31,257**
Class Lab (210,215,220,225,230,235)	30,863			**30,863**			**30,863**
Non-class Lab (250 & 255)				**-**			**-**
Office Facilities (300)	16,255			**16,255**			**16,255**
Study Facilities (400)				**-**			**-**
Special Use Facilities (500)				**-**			**-**
General Use Facilities (600)	11,202			**11,202**			**11,202**
Support Facilities (700)	78			**78**			**78**
Health Care Facilities (800)				**-**			**-**
Resident Facilities (900)				**-**			**-**
Unclassified (000)	57,249			**57,249**			**57,249**
B. OTHER FACILITIES							
(Please list major categories)				**-**			**-**
TOTAL SPACE	**146,904**	**-**	**-**	**146,904**	**-**	**-**	**146,904**

Note:

Shircliff Humanities Center:	111,681
Phillip M. Summers Center	35,223
	146,904 square feet

CAPITAL PROJECT COST DETAILS
MECHANICAL UPGRADES PROJECT
HUMANITIES AND SUMMERS CENTERS

Institution:	**Vincennes University**	**Budget Agency Project No.:**	**E-1-19-2-02**
Campus:	**Vincennes**	**Institutional Priority:**	**1**

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	February	2020
Start Construction	May	2020
Occupancy (End Date)	August	2020

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors	Project Cost
Planning Costs			
a. Engineering	$ 346,000		**$ 346,000**
b. Architectural	$ 324,000		**$ 324,000**
c. Consulting	$ 30,000		**$ 30,000**
Construction			
a. Structure	$ 2,250,000		**$ 2,250,000**
b. Mechanical (HVAC, plumbing, etc.)	$ 5,950,000		**$ 5,950,000**
c. Electrical	$ 1,400,000		**$ 1,400,000**
Movable Equipment			**$ -**
Fixed Equipment			**$ -**
Site Development/Land Acquisition			**$ -**
Other (Please list)			**$ -**
TOTAL ESTIMATED PROJECT COST	**$ 10,300,000**	**$ -**	**$ 10,300,000**

(1) Cost Basis is based on current cost prevailing as of: (June 2018)

CAPITAL PROJECT OPERATING COST DETAILS
MECHANICAL UPGRADES PROJECT
HUMANITIES AND SUMMERS CENTERS

Institution:	**Vincennes University**	**Budget Agency Project No.:**	**E-1-19-2-02**
Campus:	**Vincennes**	**Institutional Priority:**	**1**

GSF OF AREA AFFECTED BY PROJECT 146,904

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations				
2. Maintenance				
3. Fuel				
4. Utilities		**$ (24,000)**		
5. Other				
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS		**$ (24,000)**	**$ -**	**$ -**

Description of any unusual factors affecting operating and maintenance costs/savings.

The upgrades to the HVAC and electrical infrastructure will increase the efficiency of the buildings and provide a cost savings of approximately $24,000 annually.

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

BUSINESS ITEM D: **Capital Projects for Expedited Action**

Staff Recommendation

That the Commission for Higher Education recommends approval to the State Budget Agency and the State Budget Committee of the following projects:

- Indiana University School of Medicine South Bend – Harper Hall Lower Level Research Support Space and Infrastructure

Background

Staff recommends approval to the State Budget Agency and the State Budget Committee of the following capital projects in accordance with the expedited action category originated by the Commission for Higher Education in May 2006. Institutional staff will be available to answer questions about these projects, but the staff does not envision formal presentations.

Supporting Document

Background Information on Capital Projects for Expedited Action, Thursday, August 8

Capital Projects for Expedited Action
Thursday, August 8, 2019

A-8-19-2-15 Indiana University School of Medicine South Bend – Harper Hall Lower Level Research Support Space and Infrastructure

The Trustees of Indiana University request authorization to proceed with the renovation of 16,149 gross square feet (GSF) of shell space on the lower level of Harper Hall located at 1234 Notre Dame Avenue in South Bend. Harper Hall currently serves as shared space for both the University of Notre Dame and the Indiana University School of Medicine researchers. Approximately 8,200 GSF of exiting shell space will be built out to create research support space and infrastructure to be used by Notre Dame researchers with related circulation space. Additionally, the remaining shell space will be provided with a slab containing below slab utilities infrastructure. This project is estimated to cost $4,000,000 and will be funded by the University of Notre Dame and the Indiana University School of Medicine.

COMMISSION FOR HIGHER EDUCATION
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INFORMATION ITEM A: **Academic Degree Programs Awaiting Action**

	Institution/Campus/Site	Title of Program	Date Received	Status
01	Indiana University Bloomington	Master of Arts in Curatorship	06/21/2019	On CHE Agenda for Action
02	Indiana University Bloomington	Master of Science in Genome, Cell, and Developmental Biology	06/21/2019	On CHE Agenda for Action
03	Indiana University Bloomington	Master of Science in Neuroscience	06/21/2019	On CHE Agenda for Action
04	Indiana University Bloomington	Bachelor of Science in Data Science	06/21/2019	On CHE Agenda for Action
05	Indiana University Purdue University Indianapolis	Doctor of Philosophy in Musculoskeletal Health (IU)	06/21/2019	On CHE Agenda for Action
06	Indiana University Northwest	Master of Science in Criminal Justice and Public Safety	06/21/2019	On CHE Agenda for Action
07	Indiana University Bloomington, East, IUPUI, Kokomo, Southeast, and South Bend	Master of Science in Education in Educational Technology for Learning	06/21/2019	On CHE Agenda for Action
08	Purdue University Global	Bachelor of Science in Professional Flight	07/12/2019	Under Review
09	Purdue University Global	Associate of Science in Professional Flight	07/12/2019	Under Review

COMMISSION FOR HIGHER EDUCATION
Thursday, August 8, 2019

INFORMATION ITEM B: **Academic Degree Program Actions Taken By Staff**

	Institution/Campus/Site	Title of Program	Date Approved	Change
01	University of Southern Indiana	Graduate Certificate in Nonprofit Administration	07/22/2019	Adding a certificate
02	University of Southern Indiana	Graduate Certificate in Public Administration	07/22/2019	Adding a certificate
03	Indiana University Purdue University Indianapolis	Certificate for Innovative Design with Intellectual Property (PU)	07/22/2019	Adding a certificate
04	Ivy Tech Community College-Muncie	Associate of Science in Biology	07/22/2019	Adding locations
05	Ivy Tech Community College-Muncie	Associate of Science in Chemistry	07/22/2019	Adding locations
06	Ivy Tech Community College-Lawrenceburg	Associate of Applied Science in Machine Tool Technology	07/22/2019	Adding locations
07	Purdue University Global	Healthcare Quality and Patient Safety Certificate	07/22/2019	Adding a certificate
08	Purdue University Northwest	Bachelor of Science in Nursing in Nursing (Post-Licensure)	07/22/2019	Changing the name
09	Purdue University Northwest	Bachelor of Science in Nursing in Nursing (Pre-Licensure)	07/22/2019	Changing the name
10	Ivy Tech Community College-Lafayette	Associate of Applied Science in Precision Agriculture Equipment Technology	07/22/2019	Adding locations

	Institution/Campus/Site	Title of Program	Date Approved	Change
11	Ivy Tech Community College-Lafayette	Technical Certificate in Precision Agriculture Specialist	07/22/2019	Adding locations
12	Ivy Tech Community College-Lafayette	Technical Certificate in Precision Agriculture Technician	07/22/2019	Adding locations
13	Ivy Tech Community College	Associate of Applied Science in Chemical Technology	07/22/2019	Suspending a program
14	Ivy Tech Community College	Certificate in Wastewater Management	07/22/2019	Suspending a program
15	Purdue University West Lafayette	Certificate in Cooperative Education Program	07/22/2019	Adding a certificate
16	Ivy Tech Community College	Technical Certificate in Education	07/22/2019	Adding a certificate
17	Ivy Tech Community College-Bloomington & Sellersburg	Certificate in Fitness and Wellness	07/22/2019	Adding a certificate
18	Ivy Tech Community College-Bloomington & Sellersburg	Technical Certificate in Personal Trainer	07/22/2019	Adding a certificate
19	Purdue University Global	Social Science Micro-Credential	07/22/2019	Adding a certificate
20	Purdue University Global	Psychology Micro-Credential	07/22/2019	Adding a certificate
21	Purdue University Global	Nutrition Micro-Credential	07/22/2019	Adding a certificate
22	Purdue University Global	New Media Writing Micro-Credential	07/22/2019	Adding a certificate

	Institution/Campus/Site	Title of Program	Date Approved	Change
23	Purdue University Global	Leadership Micro-Credential	07/22/2019	Adding a certificate
24	Purdue University Global	Human Resources Management Micro-Credential	07/22/2019	Adding a certificate
25	Purdue University Global	Health and Wellness Micro-Credential	07/22/2019	Adding a certificate
26	Purdue University Global	Health Science Micro-Credential	07/22/2019	Adding a certificate
27	Purdue University Global	Health Information Management Micro-Credential	07/22/2019	Adding a certificate
28	Purdue University Global	Health Care Administration Micro-Credential	07/22/2019	Adding a certificate
29	Purdue University Global	Entrepreneurship Micro-Credential	07/22/2019	Adding a certificate
30	Purdue University Global	Data Intelligence Micro-Credential	07/22/2019	Adding a certificate
31	Purdue University Global	Communication Micro-Credential	07/22/2019	Adding a certificate
32	Purdue University Global	Business Administration Micro-Credential	07/22/2019	Adding a certificate
33	Purdue University Global	Arts and Humanities Micro-Credential	07/22/2019	Adding a certificate
34	Indiana University Purdue University Indianapolis	Graduate Certificate in Medical Management (IU)	07/22/2019	Changing the credit hours

	Institution/Campus/Site	Title of Program	Date Approved	Change
35	Ivy Tech Community College-Fort Wayne	Technical Certificate in Supply Chain Management	07/22/2019	Adding locations
36	Ivy Tech Community College-South Bend/Elkhart	Certificate in CDL Plus	07/22/2019	Adding locations
37	Ivy Tech Community College-Terre Haute	Certificate in Professional and Community Communication	07/22/2019	Adding locations
38	Ivy Tech Community College-Valparaiso	Certificate in Grain Systems	07/22/2019	Adding locations
39	Ivy Tech Community College-Kokomo	Certificate in Agribusiness Management	07/22/2019	Adding locations
40	Ivy Tech Community College-Kokomo	Certificate in Animal Agribusiness	07/22/2019	Adding locations
41	Ivy Tech Community College-Kokomo	Certificate in Food Science	07/22/2019	Adding locations
42	Ivy Tech Community College-Kokomo	Certificate in Plant Production	07/22/2019	Adding locations
43	Ivy Tech Community College-Kokomo	Certificate in Horticulture/Landscape Management	07/22/2019	Adding locations
44	University of Southern Indiana	Master of Science in Nursing	07/22/2019	Eliminating a program
45	University of Southern Indiana	Master of Science in Nursing in Nursing Management and Leadership	07/22/2019	Splitting a degree
46	University of Southern Indiana	Master of Science in Nursing in Adult-Gerontology Primary Care Nurse Practitioner	07/22/2019	Splitting a degree

	Institution/Campus/Site	Title of Program	Date Approved	Change
47	University of Southern Indiana	Master of Science in Nursing in Family Nurse Practitioner	07/22/2019	Splitting a degree
48	University of Southern Indiana	Master of Science in Nursing in Family Psychiatric Mental Health Nurse Practitioner	07/22/2019	Splitting a degree
49	University of Southern Indiana	Master of Science in Nursing Adult-Gerontology Clinical Nurse Specialist	07/22/2019	Splitting a degree
50	University of Southern Indiana	Master of Science in Nursing in Nursing Education	07/22/2019	Splitting a degree
51	University of Southern Indiana	Master of Science in Adult-Gerontology Nurse Practitioner (Acute)	07/22/2019	Splitting a degree
52	University of Southern Indiana	Doctor of Nursing Practice in Advanced Practice	07/22/2019	Changing the name
53	University of Southern Indiana	Doctor of Nursing Practice in Organizational and Systems Leadership	07/22/2019	Splitting a degree
54	University of Southern Indiana	Doctor of Nursing Practice in Adult-Gerontology Primary Care Nurse Practitioner	07/22/2019	Splitting a degree
55	University of Southern Indiana	Doctor of Nursing Practice in Family Nurse Practitioner	07/22/2019	Splitting a degree
56	University of Southern Indiana	Doctor of Nursing Practice in Family Psychiatric Mental Health Nurse Practitioner	07/22/2019	Splitting a degree
57	University of Southern Indiana	Doctor of Nursing Practice in Adult-Gerontology Clinical Nurse Specialist	07/22/2019	Splitting a degree
58	University of Southern Indiana	Doctor of Nursing Practice in Adult-Gerontology Nurse Practitioner (Acute)	07/22/2019	Splitting a degree

	Institution/Campus/Site	Title of Program	Date Approved	Change
59	Indiana University Purdue University Indianapolis	Doctor of Philosophy in Medical Biophysics and Biomolecular Imaging (IU)	07/22/2019	Eliminating a program

COMMISSION FOR HIGHER EDUCATION
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INFORMATION ITEM C: **Media Coverage**

Staff has selected a compilation of recent media coverage related to the Commission for the August meeting. Please see the following pages for details.

Fort Wayne Journal Gazette
Education Vital to Prepped Workforce
By Indiana Higher Education Commissioner Teresa Lubbers
July 29, 2019

Indiana has set a big goal – that by 2025, at least 60% of our state's population will have quality education and training beyond high school that align to workforce opportunity.

Today, we are at just over 43% in that metric. Clearly, we have work to do to close the gap.

One way we evaluate the impact of our state's higher education system for learners, educators, institutions and Indiana's economy is by understanding how many people are completing a degree or credential at our higher education institutions.

This measurement enables understanding of how we are effectively moving students through our education systems, from preschool through postsecondary and into careers.

The data in the Indiana Commission for Higher Education's newest Indiana Completion Report offer a gauge for how well we are preparing Hoosiers for not just today's economy, but also the economy of the future.

There is good news on this front. Data in the report show the percentage of students graduating from Indiana's public two- and four-year campuses is increasing. More than 40% of all public college students in Indiana graduate on time (an increase of almost 13 percentage points over five years). Close to two-thirds (61.8%) complete within six years, an increase of nearly five percentage points in five years.

On-time completion will always be the best and most affordable path. Delaying graduation means learners pay more. It also decreases the likelihood they will graduate at all. Even for students who attend part time, we can reduce the amount of time it takes students to earn a credential.

We know there are circumstances that can prevent learners from finishing on time. But the ability to afford to seek education and training should not be one of those barriers.

Again, there is good news to share. Indiana ranks fourth in the country – and first in the Midwest – for providing need-based financial aid.

These are just a few of the financial aid options available to Hoosiers:

• The 21st Century Scholars early college promise program, which turns 30 next year, provides up to four years of tuition to income-eligible students who apply in the seventh or eighth grade and complete the Scholars Success Program.

• Indiana's Workforce Ready Grant provides high-value certificates in the state's highest-demand sectors for high schoolers and adults.

• And we encourage Hoosier adults to take advantage of the You Can. Go Back. initiative, which offers a renewable $2,000 grant for returning adult students.

Indiana has a financial aid solution that can provide the right fit for every learner.

Finally, our completion and affordability conversation must also include the topic of quality. Through Indiana's performance funding model, institutions are tasked with – and rewarded for – ensuring students persist, complete and finish their credentials on time.

While Indiana's public institutions have made huge strides since the state's performance funding metrics were put into place, our work is far from over.

We need to ensure that more high school students graduate college-ready. We must continue the efforts to encourage adult learners to go back and finish their degrees.

We need to support our low-income and minority populations. We have to ensure our institutions are providing quality degrees and credentials.

The commission is releasing its fourth strategic plan later this year, "Reaching Higher in a State of Change," in which we will address these issues – and more – as we move closer to 2025. These challenges are complex. There are no easy solutions. But together, we can build upon Indiana's successes and ensure a ready and talented workforce for the future of our state.

Bloomington Herald-Times
IU Bloomington Leads State in On-Time Graduation
By Michael Reschke
July 27, 2019

IU Bloomington has the highest on-time completion rate of any public college or university in Indiana.

These and other figures were included in the Indiana Commission for Higher Education College Completion Report 2019, released earlier this month.

The report provides completion percentages for students who started and finished at the same campus, as well as for students who started somewhere else and transferred. Indiana University's Bloomington campus had the highest on-time completion rate in both categories.

When looking at only students who started and finished at the same campus, IU Bloomington led the way with 68.5%. Purdue University West Lafayette was second at 60.5%, followed by Ball State University at 54.2%.

It's a similar story when transfer students are included. IU Bloomington again led the pack with 72.2%, followed by Purdue West Lafayette at 62.7% and Ball State at 59.4%.

IU Bloomington's success in on-time completion is nothing new. The Indiana Commission for Higher Education has an interactive dashboard on its website that shows IU Bloomington has led this category for a decade. There are a number of reasons for this, and at least one is out of the control of campus administrators.

Between 60% and 70% of first-year undergraduate students already have a substantial number of college credits when they start at IU Bloomington, said Dennis Groth, the vice provost for undergraduate education. Some have taken so many classes that count for both high school and college credit, they're technically sophomores when they enroll.

“That helps ensure they get done on time,” Groth said.

Much of the work being done while students are on the Bloomington campus happens early in their college careers. IU administrators have found the first few years of a student’s undergraduate experience have a disproportionate effect on time to completion. That’s why efforts have been focused on retention rather than graduation.

“If you’re not retained, you’re not graduating,” Groth said.

The commission’s report shows 92.6% of undergraduate students who started in the fall of 2016 at IU Bloomington returned the next year. Only Purdue West Lafayette had a higher first- to second-year persistence rate, at 92.9%.

Some of this persistence can be attributed to the academic quality of students being admitted, but IU Bloomington has made extensive investments in its advising systems and practices, Groth said. One of those systems is called IGPS, short for interactive graduation planning system. It’s a tool that allows students map out their course of study. IGPS also tracks a student’s progress in the plan they created and it can be accessed by academic advisers.

“We’re working hard to get more and more students to plan further out,” Groth said.

IU has also made a concerted effort to hire and retain quality advisers. Groth pointed to recognition from the National Academic Advising Association as evidence. Over the last four years, IU Bloomington has had three employees win the association’s national adviser of the year award and one runner up, he said.

Another way IU Bloomington has worked to improve on-time completion rates is to target what Groth referred to as underserved students. The campus has worked to continually increase the amount of need-based aid it provides, he said. This has helped students who receive financial aid for their tuition to cover other costs of attending college, such as housing and food.

For instance, the state’s 21st Century Scholars program covers the cost of four years of tuition at public colleges and universities in Indiana for students who come from families below certain income levels. Easing the financial burden for these students has allowed them to slightly exceed the overall on-time completion rate for the campus, Groth said.

Other IU campuses haven’t been nearly as successful with on-time completion as Bloomington, but some have made large increases over the past five years. The state average is 40.6% for students who started and finished on the same campus. Every IU campus except Bloomington was below that average.

Indiana University-Purdue University Indianapolis, at 33.2%, and IU East, at 32.7%, are approaching the state average. Both campuses were below 20% five years ago. IU Kokomo has also made significant progress, going from 12.7% to 26.7% over the same time period.

Efforts to increase on-time graduation at IU’s regional campuses are similar to those in Bloomington. Regional campuses took part in an American Association of State Colleges and Universities project called “Re-Imagining the First Year of College,” said Rebecca Torstrick, senior assistant vice president for university academic affairs, in an email. This program led to changes in advising practices, student support services and first-year experience courses.

"They've put a lot of effort into first-year experience, because we know we're most likely to lose students in that first year," she said in the email.

Data from the commission's 2019 report reflect rates for 2018, unless otherwise noted.

Medium
States Can Foster Job Growth By Making it Easier for People to Learn Throughout Their Lives
By Jaime Merisotis
July 26, 2019

SALT LAKE CITY — The worlds of work and learning are merging in powerful ways, driven by the exponential growth in human knowledge. This means the abilities needed in the workplace go beyond simple "job skills" that can be learned quickly through a short-term training program.

I was with Montana Gov. Steve Bullock on Thursday when he released the newest National Governors Association report, "Governor's Action Guide to Achieving Good Jobs for All Americans," at the opening session of NGA's summer meeting. We shared a stage to talk about this collection of strategies that state leaders can use to connect workers with good jobs.

The themes in this toolkit are closely tied to our own work at Lumina Foundation. You can think of this as an "ecosystem" of work and learning, with these features:

- Learning after high school should count, everywhere it happens — at work, at home, in the military, in communities, museums, libraries, and more.

- Because learning can happen anywhere, the country needs a system with clear signals and pathways to learning, one with fewer obstacles and more on-ramps.

- The old idea of "first you learn, then you work" is replaced by an integrated model of talent development and deployment. This takes us well beyond the longstanding concept of lifelong learning and more toward a fully connected system of learning for life.

Skills shouldn't be measured by now-outdated tools like the credit hour, but on demonstrated knowledge and skills — a system in which the things people need to know and be able to do to earn college degrees and other credentials are made clear to everyone. Already, we're seeing the emergence of a wide range of competency-based credentials that businesses recognize as representing what they need for jobs they are trying to fill.

At Lumina, we're working to help bring transparency to this emerging marketplace for credentials by developing tools and a common language to ensure college degrees, certificates and other credentials fit together in a system that's easier for people to navigate.

One such tool is a credentials framework that will help make it easier to compare different credentials — for example, making clear how the skills and knowledge from one credential can lead to further learning and training as the labor market demands new knowledge and skills.

Another is Credential Engine, a platform used to collect, compare, and share information about what's learned in programs that lead to degrees, certificates, industry certifications, micro-credentials, and licenses. The objective is to enable people, including employers, to understand what those with these credentials know and can do.

It's important work. A report by Dell Technologies says that 85 percent of the jobs in 2030 haven't been invented yet. This means that not only are higher-level thinking and reasoning critical, they're a foundation — for the technical knowledge and skills people will need to update throughout their lives.

No one should be left out of the benefits that higher learning can bring to individuals and society. And we must work especially hard to educate those who have been poorly served, including African Americans, Latinos, and native populations in the United States. We also must focus on helping adults, including those in prison, who need new opportunities to contribute after they are released.

I expect more engagement from state policymakers as they seek to grow their economies by doing more to help adults, with a strong focus on people of color and immigrants. A fairer learning system will benefit everyone as states struggle to replace Boomers and early Gen X-ers as they retire.

The rapidly changing relationship between work and learning will require big changes, and we truly can't afford to leave anyone behind. Success requires a coordinated effort at every level, including among education, business, and government leaders. States will play a central role, and that's why I was proud to support the release of the NGA's guide for governors.

WBIW (Bedford)
Celebrate Impact of Internships on Indiana Intern Day, July 25
July 23, 2019

(INDIANAPOLIS) – The Indiana Commission for Higher Education and Indiana INTERNnet are encouraging employers to take a day to celebrate and recognize interns and meaningful internship experiences during the first Indiana Intern Day on July 25.

Modeled after National Intern Day, Indiana Intern Day offers a chance for employers, schools and interns to spotlight the impact of internships on Indiana's workforce and the K-12 and higher education learning landscape.

"Meaningful internships offer value beyond preparing students for the workforce. Internships are the most highly-valued work experience when employers are evaluating graduates for hire, as we highlighted in our College Value Index," said Indiana Higher Education Commissioner Teresa Lubbers. "Internships also provide Hoosier learners with an opportunity to forge connections in the local community and encourage interns to stay in Indiana after they graduate."

Indiana Intern Day has been recognized with a proclamation by Gov. Eric Holcomb.

"So many people found their career or favorite employer through an internship experience, and strong support of interns can result in a positive impression that lasts a lifetime," said Mike Slocum, executive director of Indiana INTERNnet, a program managed by the Indiana Chamber of Commerce. "Sharing our stories online is a great way to encourage more high school and college students to find internships next summer, or even still for this fall. Indiana Intern Day will celebrate a great 2019 summer internship season."

Employers and intern supervisors can fill out this pledge form to recognize interns on Indiana Intern Day. A digital media kit is available for employers to use and show how they are celebrating interns on social media and by using the hashtag, #ININternDay.

Interns are also encouraged to take to social media and share how employers are recognizing their contributions. Interns and employers are invited to join the Indiana Intern Day meet-up at the Indiana Statehouse Market at Robert D. Orr Plaza between 10:30 a.m. and 1:30 p.m. on July 25.

The Courier-Times (New Castle)
Career Center Designated 'Early College' Site
By Travis Weik
July 18, 2019

The New Castle school district has a lot to be proud of this month.

The New Castle Career Center and Eastwood Elementary School Principal Jacob White were both presented with special recognitions this week during the July school board meeting.

New Castle Career Center

Earn college credit before graduating high school? Check.

Learn a technical trade and build a resumé while still studying for the SATs? Check.

Save money on higher education while finding out if that dream job is really for you? Check.

The New Castle Career Center provides these opportunities to high schoolers from all every corner of Henry County and beyond.

Through the efforts of NCCC staff and teachers, the career center has earned an "Early College" endorsement from the Center of Excellence in Leadership of Learning (CELL) at University of Indianapolis.

The CELL Early College program in Indiana is specifically designed to help open educational pathways for kids who are the first generation in their family to go to college.

CELL Director of Early College Sandy Hillman announced the endorsement Monday during the New Castle School Board meeting.

CELL began the Early College initiative in 2003. In 2013, the Indiana Commission for Higher Education recognized CELL as the sole organization in the state to train, support and endorse Early College High Schools.

According to CELL, Early College high schools and career centers break down "the barriers that prevent students from attending college and replaces them with bridges to post-secondary success."

Hillman said the Early College focus is growing in Indiana, with 30 endorsed Early College programs and 130 schools in the state network.

"New Castle Career Center is one of only four endorsed career centers in the state, which is quite an accomplishment," Hillman said. "There are eight areas that they have to commit to and follow with fidelity. And they have done that and done a great job."

The career center began pursuing the CELL endorsement in 2013 under the leadership of former NCCC Director Bob Hobbs and former Assistant Director Soni Jones.

Part of the CELL endorsement process includes building collaboration and partnerships with higher education and local businesses.

The New Castle Career Center became an official Early College site for Ivy Tech Community College in January 2016. The partnership with Ivy Tech means Henry County students can graduate high school with industry certifications.

NCCC is also developing partnerships with local employers through the Governor's Work Ethic Certificate (WEC) program.

In order to receive the CELL Early College endorsement, New Castle Career Center also had to graduate students from the program with at least 15 transferable college credits.

"They've done that. They've done more than that," Hillman emphasized.

In the 2016-2017 school year, 17 students earned Ivy Tech credential from NCCC. That number increased to 60 students this recent school year.

"That's really tremendous," Hillman said. "It means that this staff (is) committed to ensuring that all students can earn a credential or degree leading them to a high in-demand, high wage job."

Hillman also credited the leadership of NCCC Director Chris Lamb and Assistant Director Mackenzie Jackson for setting the tone and setting the bar high to make the career center a pillar of pride in the community.

Lakeshore Public Media
College Completion Rates Continue to Climb According to Commission for Higher Education
By Jeanie Lindsay
July 12, 2019

Graduation rates at public colleges in Indiana continue to climb, according to a new report from the Commission for Higher Education.

This year's annual College Completion report shows more than 40 percent of students who enroll in a public college or university graduate on time. That's a 2 percent increase compared to last year's report.

The report also says Indiana University Bloomington, Ball State and Purdue University have the highest graduation rates in the state among public four-year colleges.

Ivy Tech Community College and Vincennes University share the highest graduation rates among two-year schools, at more than 14 percent.

The report also highlights disparities in completion rates. Campuses continue to graduate fewer low-income, adult learners and minority students on time compared to their peers.

The commission will release its annual college equity report later this summer.

KPC News
More than 300 Indiana High Schools Honored for Student FAFSA Completion Rates
July 2, 2019

INDIANAPOLIS — Just two years ago, the Indiana Commission for Higher Education tasked Indiana high schools with achieving a goal of having at least 70 percent of their students file the Free Application for Federal Student Aid (FAFSA) on or before the annual April 15 deadline.

On June 26, the Commission, along with the Indiana Department of Education and INvestED, honored 334 Indiana high schools for meeting or exceeding that goal during a third annual celebration event at the Indiana Statehouse. Last year, 130 schools were honored for hitting the target.

Additionally, 203 high schools were highlighted for meeting another goal set by the Commission: having 70 percent of graduating seniors complete the Scholar Success Program, a requirement for all 21st Century Scholars prior to graduating high school.

Even more notable, 191 high schools accomplished the 70 percent completion goal in both measurements of on-time FAFSA filing and the Scholar Success Program.

“On-time completion of both the FAFSA and Scholar Success Program is critical for Scholars to take advantage of the program,” Indiana Commissioner for Higher Education Teresa Lubbers said. “The schools we are celebrating this year are setting an example by ensuring more Hoosier students are prepared for the future.”

Hoosier students and families can turn to several financial aid and grant program options in Indiana, including 21st Century Scholars, the Adult Student Grant, the Workforce Ready Grant, and financial aid for military and public safety officers, teachers and more.

Alongside the high schools, 12 community partners were recognized for contributing to the schools’ success rates including community foundations, non-profit organizations, individuals, and colleges and universities.