

Joint Capital Improvement Committee hearing

3 p.m. Wednesday, May 16, 2018, JFC Hearing Room, Legislative Hall, Dover



Representative Johnson, Senator Sokola and the other members of the Joint Capital Improvement Committee ... good afternoon, everyone.

I want to specifically acknowledge **Senator Bushweller** and **Representative Miro** for their service to our state as distinguished members of the General Assembly. You have a tough job, but you've served with integrity and dedication in order to make this a better state. Thank you.

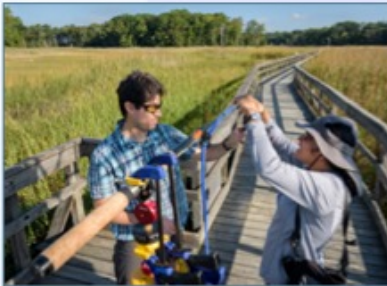
And thank you all for this opportunity to discuss the state's investment in the University of Delaware for Fiscal Year 2019.



Impact: Education, research, service & economic development



**Brain Science class,
ISE Lab**



**Wetlands research,
St. Jones Preserve**



**Habitat for Humanity,
Laurel**

We are grateful for the state's investments in UD in previous years, which have helped fuel UD's economic engine for the state of Delaware. By investing in successful partnerships, you're helping to build a strong and stable workforce for our state. Some 50,000 UD alumni live in Delaware — raising families, working in the public, private and nonprofit sectors, and contributing to the vibrant society we all enjoy.

As Gov. Carney said in his State of the State address in January, investments in people and facilities are essential to creating and securing a strong future for our state. Those kinds of investments lay the strong foundations for success and help create the kinds of opportunities we want to talk about with you today.

Let me first say that we understand the state has multiple priorities when considering the best ways to use this year's one-time funds. We understand that you face the difficult job of maintaining facilities that are aging and need to be upgraded, as we are facing the same pressures in our budget.

The University has more than 460 buildings throughout the state and a backlog of deferred maintenance projects expected to cost \$506 million over 10 years. Our health care costs are rising at an alarming rate, too. And neither the state nor the university can solve these problems simply by charging our people more money.

But we believe we can work together to solve our mutual challenges.



UD's Research Mission



Biolmaging Center at DBI —
Developed through state
partnership since 2001



Vehicle-to-Grid Technology —
Pioneered at UD



ILC Dover's Z-2 Suit —
Components developed by
UD's Center for Composite
Materials

The University of Delaware is a top-tier research university, so our role is to not only educate students and prepare them for careers, but also to make the discoveries and develop the innovations that will create whole new industries that provide jobs that may not even exist today. We attract industry, and we develop the workforce for those industries.

Knowledge and technology that's developed at research universities like UD is spun out to become marketable products and services. Studies show, for example, that patents produced at a university tend to stay and be developed *near* that university. The university provides both the seed and the soil for economic growth.

Strong partnerships between states and their universities are benefitting communities all over the country. Look at any region of our country that's thriving and rebounding from economic setbacks — from Silicon Valley to Ann Arbor, Michigan, to North Carolina's Research Triangle — and you'll find a research university like UD that produces the innovations and the workforce to fuel the economy. More research and invention means greater productivity, more entrepreneurs and more of the dynamic companies that Delaware needs for a secure future.

And it has worked here in Delaware.

When Chrysler shut down its Newark assembly plant, UD was there to turn an old industrial site into a growing research campus and source of economic growth.

As DuPont has contracted and consolidated its operations in Delaware, UD is helping its workers find new career paths through education and entrepreneurship.

And we're helping to keep Chemours research jobs here, too, by providing the company a unique opportunity to locate its new innovation center on the STAR Campus and partner with UD.

This is the kind of work that Gov. Carney and the Delaware Business Roundtable are talking about when they point to UD as a major economic driver in the state. The Roundtable's report on growth said traditional economic pillars of the state no longer have the size or the strength to attract world-class talent and produce cutting-edge technology, so "that mantle must now be assumed by the University of Delaware and other higher education institutions in the state." Higher education, according to the report, is "the long-term driving force of the state's entrepreneurship and innovation ecosystem."

Part of our strategy for fulfilling that mission includes the development of the STAR Campus, which includes the new Biopharmaceutical Innovation Building.

Construction of the Biopharmaceutical Innovation Building — which is a catalyst for the creation of a new industry in Delaware — will cost \$156 million. Through a combination of bonds, our own resources and philanthropy, the University will finance approximately \$96 million of this project. We've already raised \$25 million toward that cost from a generous gift by Carol Ammon, one of our Trustees, and Dr. Marie Pinizzotto, who earned her master's degree at UD.



Requested Capital Appropriation FY19



Biopharmaceutical Innovation Building — \$60M



Deferred Maintenance — \$6.5M

We are requesting the State to partner with us in this one-of-a-kind opportunity and invest \$60 million in capital funding to support construction of this transformational facility, either from the FY19 one-time surplus or through a phased-in approach over the next three years.

This bold investment now will pay dividends for many years — even many generations — into the future.



Biopharmaceutical Innovation Building



View from Southeast



South Entrance



View from North

We have the opportunity to create and grow a vibrant new industry for Delaware's future. The rapid advancement of biopharmaceuticals is changing the face of health care in the United States. Biopharmaceuticals involve the development of personalized medicines with the potential to treat or even cure some of the most devastating diseases, including cancer and diabetes, as well as reduce hospital care and thereby reduce health-care costs.

And the biopharma industry has the potential to change the economic landscape of Delaware. This industry has some of the fastest-growing occupations and a median salary of about \$120,000, or twice the average for Delaware. The building we've begun on the STAR Campus has created about 650 construction jobs. Working with our public and private partners, we could see the creation of 1,500 to 2,000 jobs over the next decade in Delaware's biopharma industry — everyone from skilled technicians to PhD researchers. UD will also be educating people to lead and work in the biopharmaceutical sector.



Biopharmaceutical Innovation Building



200,000 s.f. facility

- 50,000 s.f. for NIIMBL
- 150,000 s.f. for faculty and core research facilities in biopharmaceutical, life sciences and biomedical engineering fields

Next steps:

- Prospect potential donors interested in biopharma/life science innovation, cancer, Alzheimer's, Parkinson's, diabetes causes and therapies
- Feasibility discussion with top donors and supporters around NIIMBL project.

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UD, as you know, is leading the nationwide initiative known as the National Institute for Innovation in Manufacturing Biopharmaceuticals, or NIIMBL. This partnership is comprised of 150 other public and private institutions — including Delaware State and Del Tech — and largely funded by the U.S. Department of Commerce.

NIIMBL is one of 14 national manufacturing institutes in the country. They are each centered on an industry that the federal government and our peers has determined is the “sweet spot” of their region. For Delaware, biopharmaceuticals is the new “sweet spot” — building on strengths in chemical engineering, chemistry, and biological sciences. We can own this space.

To explain why we’re so excited about this, let me show you a short video that can explain biopharmaceuticals and NIIMBL.



The challenge of biopharmaceuticals is that they are difficult and expensive to make, so we need better and more efficient ways to get them to the right people at the right time. The biopharmaceutical manufacturing industry is in the midst of a paradigm shift toward more flexible, more lean manufacturing facilities and processes.

That's where the University of Delaware comes in.

UD has expertise in health sciences, chemical and biomedical engineering, advanced materials, business, public policy and many other fields that relate to biopharmaceuticals. Those strengths — and the state's support — helped UD become the headquarters of NIIMBL.

The University and the state are poised to become a world leader in this rapidly expanding field. Of course, state support has been instrumental in securing this initiative at UD.



Biopharmaceutical Innovation Building

Commerce Secty. Pritzker tours DBI before NIIMBL announcement



In fact, this initiative really has its roots in the Delaware Biotechnology Institute, which was formed in 2001 with UD, the state and other partners. DBI has grown into a major driver of economic development, thanks to strategic capital investments and long-term support.

At this point, let me ask our interim provost, **Dr. Robin Morgan**, to say a few words. Dr. Morgan has been on the UD faculty for 32 years and most recently chaired our Department of Biological Sciences. She served for 11 years as dean of the College of Agriculture and Natural Resources, and she is a faculty member at the Delaware Biotechnology Institute.

Dr. Morgan

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Thank you, Dr. Morgan.

Now, when the opportunity arose to bring NIIMBL to Delaware, the Commerce Department recognized the expertise and assets we had accumulated in the biotechnology field. They saw that we could translate research and discovery into something new and innovative. The Commerce Department and other institutions saw that Delaware — with its resources, location and existing partnerships — was the sweet spot for investment now.

Thanks to the right investments made in DBI over nearly two decades, Delaware has this unique opportunity to lead the nation in the emerging biopharmaceutical industry and create a more secure and more diversified economic future for Delawareans.

What's more, innovations in biopharmaceuticals can help lead to lower health-care costs for everyone. A quarter of Delaware's operating budget is spent on health care, with a per-capita cost that's 27% higher than the national average. Yet the quality of health care in Delaware lags at 31st among the states.

Biopharmaceuticals could help improve the health of Delawareans and help the state save billions of dollars over a decade — money that can be sustainably invested throughout the state in public education, criminal justice, infrastructure and more.

With every investment we make, one of the questions we are asked — and ask ourselves — is how many jobs will it create? That is certainly the right question to start.

In fact, our students ask similar questions.



Successful Students, Successful Graduates



On-Campus Career Fairs

Our graduates want jobs with good pay and benefits, of course. But they also want jobs that encourage them to be creative and innovative — jobs in fields that are growing and with organizations that are discovering new ways of doing things. They want to know that their work is meaningful and, ultimately, contributes to building a better, healthier and more sustainable world.

So the question we should ask ourselves is, “How can we keep attracting businesses to Delaware and keep building an economy with the kinds of good jobs that our graduates — and all Delawareans — want and need?”

That’s the challenge — and the opportunity — that the University of Delaware shares with the State of Delaware. We can embrace this challenge — and realize both short- and long-term benefits — by making strategic investments in the University of Delaware’s capital needs right now.

Arguably, one of the best ways to invest in the future of Delawareans is to help meet their education needs. Students need modern classrooms and laboratories to keep pace with their peers around the country.

Investment in the Biopharmaceutical Innovation Building is integral to our vision for the STAR Campus.



STAR Campus



The STAR Campus is an unparalleled opportunity for economic growth in Delaware. It represents a seismic change for UD and the state, with ample space and a prime location to develop a whole new community that connects our academic and research strengths with the needs and input of our community partners.

It's much different than a traditional industrial park, where isolated and unrelated buildings are surrounded by parking lots. On the STAR Campus, we're developing teaching and research facilities that connect our students and faculty with entrepreneurs and leading companies. Buildings are clustered together, so people who work in one area can easily meet face-to-face and collaborate with people in another area. It's an idea that we call "bump and connect," and we believe the STAR Campus is an ideal place to realize that vision.



Kendall Square, Cambridge, Mass.



The closest model we can find is Kendall Square in Cambridge, Massachusetts.

At the center of that neighborhood is the Massachusetts Institute of Technology — those are the yellow properties on the map. And all of those companies you see clustered around it are there because they want to be close to the discoveries and innovations that are coming out of MIT. They call it “the most innovative square mile on the planet.”

MIT was founded in 1861, but all of that development around it has happened in just the past 10 or 15 years. Kendall Square is the highest-grossing real estate market in the Boston area. If the STAR Campus could attract even 10% of that kind of private investment, think of the impact it would have on Delaware jobs and our economy.

The difference between Kendall Square and the STAR Campus is that we’re starting with a nearly blank slate. That means we can be very intentional and strategic about what and where to build and about how we leverage that development to benefit the University and the state. We’re not interested in building just for the sake of building; we want everyone who comes to the STAR Campus to bring some kind of research program, internship opportunity, service or clinical experience for our students and faculty.



STAR Campus

An Economic Engine

- Opportunity Zone — Federal tax incentives to spur investments
- Currently 632,000 sq. ft. of new construction, plus Newark Regional Transportation Center
- About **1,300 construction jobs**
- Part of \$900M in capital spending by UD since 2007



That's what makes the STAR Campus unique. We've looked around, and we know of no other development project anywhere that connects academics, research and community partners like we're doing at the STAR Campus.

So we're grateful that Gov. Carney and others, including the Delaware Business Roundtable, have recognized that UD and the STAR Campus can play a vital role as an economic engine for the state.

Our effort to realize the potential of the STAR Campus has received a big boost from the U.S. Treasury Department, which recently designated it an Opportunity Zone. Thanks to support from Gov. Carney and his administration, development at the STAR Campus will be eligible for federal tax incentives to help spur private-sector investments. It will also be an outlet for banks that are seeking to fulfill their Community Reinvestment Act obligations.

Those incentives will be very beneficial as we continue to develop the STAR Campus over the next several years.



STAR Campus

STAR Hotel & Conference Center

A research- and experience-driven learning laboratory that is essential for sustaining a top-ranked Hospitality Business Management program at UD.

- A showcase for UD's innovation in research and collaboration with industry
- Home of Hospitality Services Business Management (HSBM) program
- Hub for interdisciplinary ventures, where centers, institutes and research initiatives expand their impact on campus



STAR Graduate Community

Conceptual plan for market-rate housing, targeting graduate student/young professionals.

Driverless vehicle proving ground

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Among the projects that we envision is a new hotel and conference center. This would be like a working classroom and laboratory for students and faculty in our hospitality management programs. We already have excellent programs, and through expanded partnerships with the hospitality industry, we can make UD a top leader in this growing field.

We also want to develop housing, retail businesses, restaurants and parking for our graduate students, their families and other young professionals on the STAR Campus.

And we're looking at creating a testing and proving ground for driverless vehicles. As you know, this is a hot area of research and development, but there are still a lot of challenges that need to be solved involving safety, infrastructure and public policy. UD has significant expertise in developing driverless cars, so a large-scale research facility on the STAR Campus would be a perfect fit for Delaware.

These projects — and many others to come — would help create the “community” that we envision for the STAR Campus.

Already, UD's Health Sciences Complex is connecting our teaching and research with clinical services to help meet the needs of people in the Newark area.



STAR Campus

The Tower at STAR



- Health Sciences research & teaching
- Nursing — State-of-the-art learning lab, interactive studio, sleep lab, audiology booths
- Health & Wellness Services; Center for Health Assessment & Research Translation; demonstration kitchen
- 120,000 sq. ft.; completion in 2018

When the Tower at STAR opens later this year, our students in nursing and other fields will benefit from a state-of-the-art learning lab and interactive studio that connects them with instructors, clinicians and patients. This model of combining teaching and research with authentic learning and hands-on problem-solving has helped make our Physical Therapy program the best in the country.



STAR Campus

Chemours Discovery Hub



- \$150M research & innovation facility
- Partnership with UD: Research, innovations and internships
- 312,000 sq. ft.
- Completion: 2020



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By early 2020, Chemours is expected to open its global research and innovation center — the Discovery Hub — on the STAR Campus. Chemours had considered moving its R&D operation to Connecticut, then realized that the STAR Campus provided an even better opportunity. This will help keep 330 research-related jobs in Delaware, as well as feed the pipeline of talented innovators who will drive Delaware's economy in the future.

Of course, the best person to explain why Chemours is building at the STAR Campus is the company CEO himself, Mark Vergnano. He couldn't be here in person, but he recorded a short message that he asked us to play for you.

[Video here: <https://www.youtube.com/watch?v=16ipkS2jG4M&feature=youtu.be>]



STAR Campus

Newark Regional Transportation Center



Scheduled opening: Summer 2019



And, thanks to the state's support and leadership, the Newark Regional Transportation Center will further strengthen connections within the region and bring even more companies, more researchers, more entrepreneurs and more jobs to the STAR Campus.

The STAR Campus is developing quickly. We had hoped to cover more of the construction cost of the Biopharmaceutical Innovation Building using University resources.



McKinly Laboratory

- August 2017 fire; 80% of building remains closed
- An opportunity to renew the heart of the science corridor on the central campus



Then in August, we experienced an extensive fire in McKinly Lab, which is along Delaware Avenue in Newark. About 80% of the building sustained significant damage and still remains closed now. That has put a significant squeeze on our academic scheduling, forcing students to take classes and labs in the evenings and on weekends.

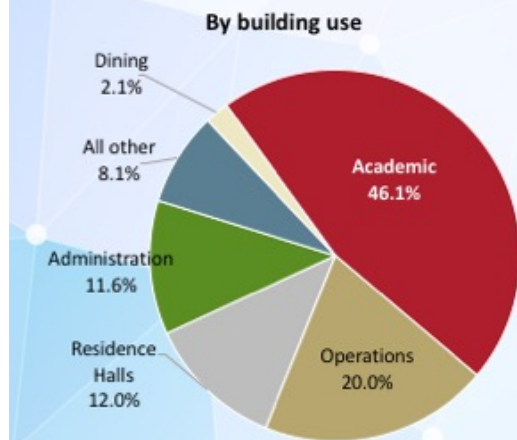
So we'll use this opportunity to redesign McKinly to get more research and instruction space out of the same footprint, bringing some of our physics, biology, chemistry, psychology, engineering and life sciences assets together under one roof.

This will no doubt be an expensive project. So McKinly is going to take a lot of the money that we might have otherwise put toward the Biopharmaceutical Innovation Building.

In the meantime, we still need to address our backlog of deferred maintenance projects.



Deferred maintenance — \$506M over 10 years



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Most of our laboratory buildings are 30 to 50 years old, and many of them need upgrades or repairs to their HVAC, electrical and safety systems, as well as their generators and roofs. Over the past several years, the University has put off some maintenance projects so we could devote more of our resources to financial aid and academic programs for students.

But we can't delay this work forever. We're investing about \$36 million a year to help reduce this backlog, and we recently implemented a 10-year plan that addresses our top maintenance priorities.

So we ask that you preserve the \$6.5 million that Gov. Carney recommended in his budget, which could be put to use immediately to reduce our deferred maintenance backlog.



Building and Strengthening Our Economy



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In conclusion, let me return to the question I asked at the beginning of this presentation: “How can we keep attracting businesses to Delaware and keep building an economy with the kinds of good jobs that our graduates — and all Delawareans — want and need?”

I believe that, with your help, a significant part of the answer lies in the unique opportunity presented by the Biopharmaceutical Innovation Building. A decade from now, biopharmaceuticals will be a thriving industry. And if we invest today — together — we can make Delaware a clear leader in this exciting and promising field.

Thank you. And we’ll be happy to answer any questions you may have.

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