

One year later: An update on Bioscience Connecticut and its impact on the UConn Health Center since groundbreaking

By Nicole Wetsman
West Hartford Press staff

As the location of The Jackson Laboratory (JAX) in Bar Harbor, Maine, has long been a main center of mammalian genetics research, the expansion to the UConn Medical Center's campus in Farmington might allow that location to rise to prominence in the field.

"It's going to invigorate science research here," said Mark Lalande, senior associate dean for research and director of the University of Connecticut Stem Cell Institute.

Bioscience Connecticut, Gov. Dannel Malloy's 2011 initiative to increase innovation in the sciences and expand the UConn Health Center, was a draw for JAX to expand into Connecticut and create The Jackson Laboratory for Genomic Medicine. Ground was broken on the Bioscience Connecticut construction project at the Health Center one year ago this month.

According to an article on the Health Center website, "In the year following its groundbreaking last June, all aspects of Bioscience Connecticut have moved forward on time and on budget. Of note, the project has created about 500 construction and related jobs on the UConn Health Center campus in its first year, including higher-than-required averages for small business participation and 85 percent of all work going to Connecticut-based contractors. The number of construction jobs will rise significantly over the next three years."

JAX Genomic Medicine is hiring new researchers from the Connecticut area to fill its new lab space.

Although its permanent building will not be completed until 2015, JAX has already begun recruitment in the area.

"We've rented lab space for three of their scientists, and they will lease additional space at the UConn Health Center at the beginning of 2014," said Lalande.

Lalande said the arrival of the Jackson Lab and the intended collaboration between UConn and JAX has generated a lot of enthusiasm.

"We think that between the strengths of UConn and Jackson we can be a leading university in providing genomics education for the general public, for health care providers and for students," said Lalande.

While standard microbiology and genetics generally look to examine a specific gene, genomics takes a broader view and looks at the complete human genome – that is, it studies the entire sequence of DNA.

The UConn Medical Center's Institute for Systems Genomics was formed in November 2012 in anticipation of the arrival of JAX Genomic Medicine and will allow UConn to grow its own genomics program in

conjunction with JAX.

"It's the university's interface with the Jackson Lab," said Lalande. "The goal there is to create a research and education community around genomics."

Collaborative research, education opportunities

Programs through the institute are intended to both foster collaboration between JAX and UConn and to create a base for world-class genomics education and research. "We've already written 13 joint grant applications between Jackson folks – both from Bar Harbor and from Farmington – and UConn," said Lalande.

The institute has also launched a program called ARC – Affinity Research Collaborative – that will fund collaborative genomics projects between Jackson and Farmington.

ARC will award four teams \$250,000 each; Lalande said the institute has received 14 applications thus far. Each team must contain members from both Jackson and UConn, and each team's project must be interdisciplinary.

UConn is also creating a new Ph.D. program in systems genomics.

"We want to co-train students who have a background in computational stuff with students who have a background in biology," said Lalande. "They'll learn about genomics either around biological context or computational. What we want in the end is a student who, no matter what their background, they can talk about genomics."

According to Lalande, the researchers from JAX are experts in the computational aspects of genomics, which is a subset bioinformatics.

Genes contain millions of base pairs, and researchers need thorough computational analyses in order to understand the biological components of their data. JAX researchers will therefore be able to partner with those from UConn and provide the computational piece of the puzzle.

Such collaborations are already taking place. For example, Dr. Bruce Mayer of the UConn Department of Genetics and Developmental Biology is partnering with Jeffery Chuang of The Jackson Laboratory.

"Bruce is interested in understanding what proteins are altered in cancer cells," said Lalande. "Chuang is providing the bioinformatics."

According to Lalande, the majority of the research done in the new Jackson Lab will be done in cancer genomics.

One of the JAX Genomic Medicine major projects in the Farmington location will be its Cancer Avatar Program. Researchers will use laboratory mice as stand-ins for specific cancer patients by trans-

planting their individual tumors into a mouse avatar.

"They'll see the patients tumor in the mouse, treat the mouse, and that would inform how you treat the patient," said Lalande, "or at least, that's the ultimate goal."

According to Lalande, this research is part of the ongoing evolution of cancer therapies toward more personalized medicine.

"Ten years ago, people were trying to look at cancer as one disease," he said. "Because of genomics, we now understand that all cancers are different. Maybe we should look at these as more individualized."

Cancer cells grow and propa-

gate due to mutations in an individual's genome. By using genomics, researchers hope to find the specific mutations responsible for individual cases of cancer and use that knowledge to tailor treatments to each case.

"There's a ways to go, and it's complicated," said Lalande. "But there's a good reason to invest heavily in this. They would be one of the first groups in the world doing this."

While JAX will bring new genomics innovation to UConn, Bioscience Connecticut will affect and improve many other aspects of the health center.

A new hospital tower will be

completed in 2016 as well as a new outpatient care center; planning is also under way for renovations of the main building.

The sizes of the classes of both the Schools of Medicine and Dental Medicine will be increased by about 30 percent, and faculty will be hired to meet the needs of the growing student population. Renovations will also be made to the current academic and research buildings.

All of the projects are currently on time and on budget; according to Malloy, their completion will be a step toward placing Connecticut as a leader in the bioscience industries.

Rates that move you
right this way

Home Equity
Line of Credit

rates as low as

2.75%* APR
(prime -0.50%)

With rates as low 2.75%* APR (prime -0.50%), you still get the **guidance and support** from our team of experienced loan advisors. Whether you're looking to make home improvements, consolidate debt, pay college tuition, you name it, we'll help you find your way.

Visit simsburybank.com/mortgages for information, applications and to find an advisor near you.

SimsburyBank.com/mortgages
860.693.3329



Simsbury Bank

The Simsbury Bank Home Equity Line of Credit Annual Percentage Rate (APR) is a variable rate and will be based on the highest prime rate preceding the start of the billing cycle minus 0.50% (the Prime Rate is currently 3.25% APR as of 05/02/13). Found in the "MoneyRates" section of the Wall Street Journal. Rates are subject to change on a daily basis without notice. Maximum APR that can apply is 8.99% APR and a minimum APR of 2.75%. Rate subject to change monthly during life of loan. Draw period is 10 years; repayment period is 10 years. If you make interest-only payments during the draw period, then at the start of the repayment period, your monthly payments will increase because you must now pay back the principal as well as interest. To qualify for the 2.75% APR, the borrower must have a minimum credit score of 740; minimum APR is 3.00% with a credit score of 739 or less. There is an annual fee of \$35. Other restrictions may apply. Consult your tax advisor about the potential deductibility of interest.