

ABSTRACTS



SPARKING THE NEXT WAVE OF INNOVATION

Hackensack Meridian Health and the New Jersey Innovation Institute (NJII), a wholly owned not-for-profit subsidiary of New Jersey Institute of Technology, have launched the first incubator of its kind for health care advances in New Jersey. The Agile Strategies Lab is designed to help create and launch the next wave of problem-solving in health care through better devices, improved technology and more efficient services to provide a higher quality of care, lower costs and an enhanced patient experience.

The concept is similar to the popular ABC reality show *Shark Tank* – 10 companies have already pitched ideas to a panel of experts. Innovations include a device to lower risk in common surgeries

and a wearable monitor to better track patients' vitals. Four finalists will be selected to start the process to bring the products or innovations to market.

"As a member of NJII's Ideation Program for Healthcare, Hackensack Meridian Health intends to leverage the combined skills of entrepreneurs, major corporations, research scientists, students and NJIT faculty to solve our challenges with novel strategies and products," said Robert C. Garrett co-CEO of Hackensack Meridian Health. "This isn't theoretical, it's happening."

Hackensack Meridian Health has committed \$25 million, a new revenue stream to help companies develop trailblazing products and services. This seed

money will help launch ideas to the point where they can become viable and receive financing through venture capitalists.

While many of the nation's major academic medical centers have such incubators, this venture is truly unique because it brings together entrepreneurs and innovators from life sciences, engineering and technology – not just the clinical realm. This remarkable collaboration will provide solutions to health care challenges in every sphere, not just in creating more effective medicines or treatment.

"The health care market is overdue for a new disruptive technology that makes a marked improvement in the way health care technology products and services are provided to consumers," said Joel Bloom, Ph.D., president of NJIT. "It is our belief that this new state-of-the-art ideation center will help spark our next wave of innovation." ■

SHAKING UP THE SYSTEM

Liem Ho '17, with the guidance of Assistant Professor Michael Lee, transformed what was once a static Excel file of some 200 names and numbers into Map + Expand, a Google Map populated with LGBTQ-friendly health care providers based in New Jersey and nearby Philadelphia.

Recent national surveys have found that 1 in 4 low- and middle-income LGBTQ patients lack health insurance. Of the patients surveyed, 19 percent say they were refused care because of their gender identity. What's more, 28 percent of LGBTQ respondents say a provider verbally and/or sexually abused them, and 50 percent of patients say they had to teach their providers about LGBTQ care.

"There are a lot of people who don't have proper health care and who are very cynical about the health care industry," says Ho, who graduated from NJIT with a bachelor's degree in biology. "I think one of the big movements in health care

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PHOTO: SHYDALE JAMES



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is not only providing communication between the patient and the provider but also ensuring that people get the quality care they deserve and need."

Armed with a 2016 Provost Summer Research Fellowship award and data from Garden State Equality (New Jersey's largest LGBT organization), Ho was able to create a working prototype that boasts cross-platform compatibility, allows users to search the website for providers and physicians by name and location. It also offers general information, like email and street addresses and points of contact.

Soon, there will be a field that allows users to trigger a search according to specializations and specific services needed. "We're trying to go through all the possible keywords, technical terms and lay terms people might use, such as transitioning, hormone therapy, physical exam," says Lee, who specializes in computing education research and provided Ho and a high school intern working on the project with an understanding of how website architecture and app development work. "I told them the service needs to be as easy to use as possible; require the fewest numbers of clicks; everything should be easy to navigate. The whole thing is pretty much a map: where am I? Are there providers in my area? What services do they provide? Get the information and go."

What's sure to be the website's most important feature: a mechanism that will track people's experiences, allow for feedback and publish crowd-sourced reviews — much like Yelp.

"I use Yelp all the time," says Ho. "I thought if we could implement a similar system for people looking for LGBTQ-friendly health care providers — providers that know how to use proper pronouns, know how to treat people with respect — it would build more trusting relationships." Adds Lee: "It will also serve as a safe space for people to be able to leave input as a community, add more providers and information about physicians, their specializations and the services they offer."

"This resource will help us to see which sections of the state are more inclusive than others, and we can act on that," says Ho. "When you choose a place to live, you want to make sure that all the vital resources are there — and that includes proper health care." ■



PHOTO: ENZO DOMINGO

Public Safety Achieves NJSACOP Accreditation Status

NJIT's Public Safety Department has received accreditation from the New Jersey State Association of Chiefs of Police (NJSACOP), whose mission is "to promote and enhance the highest ethical and professional standards in law enforcement at all levels throughout New Jersey." NJSACOP presented the university with an accreditation certificate during the department's annual swearing-in ceremony July 12 at Weston Hall.

The recognition signals professional excellence in law enforcement and follows a 17-month-long process that required an extensive internal review of standard operating procedures and a comprehensive external assessment by NJSACOP.

"NJSACOP accreditation will lead to greater accountability within our agency, reduced risk and liability exposure, stronger defense against civil lawsuits, increased community advocacy and more confidence in our agency's ability to operate efficiently and respond to community needs," said NJIT Police Chief Joseph Marswillo. "This milestone is undoubtedly the greatest accomplishment in our department's history, and has driven positive and necessary change. Most importantly, it is a testament to the value of collaborative team efforts."

This assessment considered comments from the NJIT and Newark communities about the NJIT Public Safety Department, and involved a campus visit to examine

From left: Andrew Christ '94, '01, vice president for real estate development and capital operations at NJIT; Joel S. Bloom, president of NJIT; Chief Joseph Marswillo; Lieutenant Michael Villani; and Accreditation Manager Harry S. Delgado.

the department's policies and procedures, management, operations and support services. The assessment team included law enforcement practitioners from similar agencies throughout the Garden State.

Among the new tools and procedures implemented at NJIT as a result of the accreditation process are a certified 9-1-1 public safety system staffed with professionally trained dispatchers and the adoption of body-worn cameras for every NJIT public safety officer. During the three-year accreditation period, the NJIT Public Safety Department must submit annual reports attesting to its continued compliance with 105 NJSACOP "best practice" standards.

"Accreditation from the NJSACOP verifies that the NJIT Public Safety Department meets 'best practice' standards in law enforcement," added Andrew P. Christ, vice president for real estate development and capital operations at NJIT. "The university is fortunate to have Chief Marswillo and the entire NJIT Public Safety Department keeping our campus safe, and we congratulate them on receiving this highly prized acknowledgement." ■

Alumnus Offers Plan to Help Rebuild Nation's Infrastructure

Ask any regular traveler of America's roads, bridges, tunnels and highways — our nation's aging infrastructure is in dire need of repair and becoming worse. An inventive solution to the problem of funding infrastructure improvements that centers on repatriating the money U.S. corporations earn overseas has recently been offered by Martin Tuchman '62, a philanthropist and one of America's most successful entrepreneurs.

"There is between \$2 and \$3 trillion sitting overseas in corporate profits," explains Tuchman, who serves as an adviser to U.S. Rep. Carolyn Maloney of New York on repatriation and finance issues. "What we are attempting to do is to



bring that capital back into the States. The way to do that is to give them some tax incentive to be able to accomplish this."

By proposing a federal tax rate of 5 percent versus the higher 35 percent rate, a substantial amount of money can be brought back to the U.S. But, as Tuchman says, the government would require the companies to invest in the U.S. infrastructure in order to forgive the higher tax rate.

"This will jump-start the economy in this country," Tuchman said. "There will be good jobs — electricians, construction workers. There will be jobs that can't be outsourced overseas."

Tuchman proposes that companies retain 70 percent of the cash to use in any way they wish, while 25 percent would be

Martin Tuchman's plan to help rebuild the nation's infrastructure was featured on the Jumbotron in New York City's Times Square.

used to purchase municipal bonds from participating states. The municipal bonds would be owned by the repatriating companies and remain on their balance sheets as assets. The companies would retain 95 percent of what they are repatriating.

As a founder of Interpool, one of the nation's leading container leasing corporations and founder also of Trac Lease, the largest chassis leasing company in the country, Tuchman has successfully repatriated several hundred millions of dollars back to the U.S. through the Jobs Creation Act of 2005, which he has successfully invested in the U.S. economy.

Tuchman currently is chief executive officer of the Tuchman Group, an investment group with holdings in real estate, banking and international shipping. He also serves as chairman of the Tuchman Foundation, an umbrella company for the Parkinson's Alliance that works closely with Parkinson's research organizations that seek grants from the National Institute of Health. In March 2016, NJIT's School of Management was named in honor of Tuchman. ■

STONE SCULPTURES FIND A NEW HOME

For Daniel A. Henderson '11 HON, whose art explores the viral allure of technology and its unintended consequences, the relocation of three of his sculptures to the ground floor of NJIT's New Jersey Innovation Institute represents a homecoming of sorts. "Fossil Fuel" (2009), "Yellowstone" (2009) and "Premo" (2011) are now situated in an expansive new venue that allows spectators to fully appreciate the scope and grandeur of his work.

"It was really a very organic process where you and I can draw a plot for a garden but we really

don't know where we are until it's finished," Henderson recalled. "Once we had this physical space completed and here in an innovation institute, President Bloom said, 'I have an idea, I'd like to see what you think about this' and generously offered that we think about putting sculpture in this space, and it just made sense conceptually. But now as we sit here amongst them, it really has an impact, even more than what we thought when we were talking about it. So that's how things work sometimes – it's an organic process and, in a way, it's almost

like the pieces chose themselves for this space."

Since 2007, Henderson, a member of the NJIT Board of Trustees and Albert Dorman Honors College Board of Visitors,

has been engaged in the ambitious pursuit of outsized public sculpture. An inventor who developed the wireless picturephone and holds 29 U.S. patents, Henderson believes that invention, like sculpture, is an artistic endeavor. Through his work, he shows how the permanence of iconic products — from Viewmasters to Princess phones — sculpted in stone represents the connection with the natural world and contrasts with the temporality of technology and the materials from which they are constructed.

His second solo museum exhibition was on display at the Grounds for Sculpture in Hamilton, N.J. In 2009, he donated his sculpture entitled "The Brick" (2008) to NJIT, where it is permanently installed in the main entry of Fenster Hall. In recognition of his exceptional achievements as an entrepreneur, inventor and sculptor, and as an esteemed friend of the university, NJIT conferred the degree of doctor of science, honoris causa, upon Henderson at the 2011 commencement ceremony. ■



PHOTO: JAMES MARKO