

Creativity, Technology and Public Health: MPH Students Reflect on Nexus Maximus 2016 at Philadelphia University

As part of our collaboration with Philadelphia University, the JCPH MPH program was invited to participate in Nexus Maximus 2016, Philadelphia University's annual student challenge to create innovative ideas via student Interprofessional teams. This was the first time students at Thomas Jefferson University (TJU) were invited to participate in this weekend long initiative. This year's theme was **Personal Health – Innovation, Data, and Empowerment**. Students were broken up into 6 legions with 10 teams per legion of 4-6 students per team who received workshops and support in their brainstorming and developing a sustainable product/service to improve individual health in a range of settings including the healthcare environment. I was pleased to be able to participate as a faculty member in the NOVO legion in the event. One of the aspects of the event that is unique is the diversity of participants – there were students from majors ranging from health to architecture to

engineering to business and beyond.

We are very proud of the five MPH students who agreed to spend an extended weekend with new colleagues and friends to develop creative ideas to improve the health of individuals and communities. "We were so impressed with the initiative of the TJU students. They jumped right into Nexus Maximus on short notice and immediately began contributing to their team. This kind of enthusiasm and bias toward action is what Philadelphia University and TJU students, and faculty have in common and is a big part of our successful partnership" states D.R. Widder, Vice President of Innovation and the Steve Blank Innovation Chair at Philadelphia University.

We expect Jefferson students from the College of Population Health and other colleges will be active participants in this creative learning experience in the years to



Left to right: Philadelphia University President, Dr. Spinelli, Steve Orellana; Cordelia Elaiho; Roxanne Erolin; Carly Lane; and James "Wes" Heinle.

come. Below are the students' reflections from the experience.

Student Experiences at Nexus Maximus

When I heard about Nexus Maximus, I was immediately intrigued by the challenge of the event: improving personal health through innovation, data, and empowerment.

As a student of public health with a background in the basic sciences, I desire to find out more about how our society can benefit from creative ways to solve problems related to our health. This competition struck me as a unique opportunity to broaden my knowledge base through joining a team of students with the purpose of finding a solution to a health problem.

My team was comprised of students

with expertise in textiles, engineering, and software design. We immediately began to discuss some common health issues, including the emotional burden of illness, waste of supplies, and infection. Ultimately, we pursued a project which developed a technological solution to reduce hospital acquired infections by increasing compliance of hospital policies on hand washing.

We generated a system of a communicating named **TX Smart Hygiene**, a wall-mounted scanner plus wearable device which would hold healthcare workers accountable to hand washing when entering and exiting hospital patient rooms. This system would be able to

collect data on the hygiene habits of healthcare workers and empower patients to know that their care will be at the hands of an adequately sanitized provider. In addition, this source of data would allow hospitals to be able to track the movement of pathogens through a more detailed record of the movement of healthcare workers within the hospital.

This event was an inventive way to collaborate with students of various backgrounds; our design was a success due to each of our inputs and areas of expertise. And on behalf of our team, we were proud to receive most innovative project award and competition runner-up.

–J. Wes Heinle

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Nexus Maximus 2016 is an event I will always remember. My initial interest in attending this event, although with minimal forehand information, was to see what being in an innovative environment would mean. I never heard of Philadelphia University and was pleasantly surprised by the campus and the work of the students. Nexus Maximus was a packed 3 days of meeting new people, finding cohesion and developing a presentable product. My group consisted of students from multiple disciplines: a Master's Interior Architect, a Junior Fashion Merchandiser, a Junior Industrial Designer, a Freshman Animator, a Master of Occupational Therapy student and myself, a Master in Public Health candidate. The goal of Nexus Maximus this year was to develop innovative technology to solve a health problem. My group tackled sleep deprivation, which is hard when the mindset of most Americans is to skimp on sleep in order to work.

Most people do not envision design merging with health, but it was the basis of our weekend. I have many interests and often we are put in boxes and told to pick one or the other track. Nexus Maximus showed me there is space for bridging my interests and there is a great possibility of collaborating and producing great, effective, and wide reaching work.

—**Cordelia Elaiho**

During my first week of class at Jefferson College of Population Health (JCPH) - Master of Public Health Program, I was offered the opportunity to work on a cutting-edge, multi-sectorial project involving the creation of a new health-centered technology. This project was hosted by Philadelphia University, and comprised of multiple teams made up of students from Thomas Jefferson University, KEA in Copenhagen, Pace University, and a university from Finland. My experience with this project was very fulfilling, and I

grew tremendously from the opportunity to collaborate with students from various backgrounds, majors, and perspectives.

For my 'sprint project' we designed a mobile application called **UberGivesBack**, aimed at addressing the need for disabled populations who require transportation to medical facilities. The goal was to incorporate the three themes of Nexus Maximus (Innovation, Data, and Empowerment) and I believe my group outlined a creative way to improve the personal health of disabled patients by improving access to healthcare while decreasing the burden of costs.

Most breakthroughs come from working with others and collaborating to come up with fresh and innovative ideas. Nexus Maximus was no exception to this and over the weekend I attended workshops that helped explain data sharing, building design, and new ways to connect technology with personal health. All of this makes me optimistic about where we are headed in the future and how we approach health problems. In short, this was a rewarding experience that I hope many take advantage of next year!

—**Steve Orellana**

Nexus Maximus exceeded my expectations. I decided to participate to get out of my comfort zone to look at health solutions from a design perspective. During the program, we were required to attend workshops that discussed a variety of topics that gave background information on health issues and ways to design solutions to those problems. A few of the workshops I attended were architecture-focused and looked at how the design of a space such as a hospital lobby can affect a patient's experience.

My team comprised of three architecture majors, one industrial design major, and myself. Their primary approach to solving a

problem usually involves creating a tangible product, a mode of thinking that was completely new to me. Our team looked at ways in which we can reduce frequent visits to the emergency room and narrowed our focus further by looking at a particular disease that can attribute to frequent visits to the ER. We designed a kiosk that would be conveniently located in local pharmacy stores to check blood glucose levels to bring awareness to proper management of diabetes. Overall, Nexus Maximus provided me with valuable experience in approaching health issues in innovative ways.

—**Roxanne Erolin**

I could not have imagined a better way to begin my experience at Thomas Jefferson University than with the Nexus Maximus 2016 event. We (fellow students, faculty, innovators, etc.) were thrown together in an enriching environment promoting rapid innovative thinking.

My team consisted of students with backgrounds in business, design, pre-medicine, occupational health, and myself, with a background in physiology and public health. With the amount of diversity in our backgrounds, we took advantage of the massive amount of strength accumulated in our team to develop a device and concept geared towards preserving the autonomy of individuals at a life stage where public transportation and operating motor vehicles are no longer advisable.

Ensuring simple design and concept, we structured a program where the individual can order a vehicle using a handheld device with our unique design. An emergency trained driver then picks up the client and transports him/her to their specified destination. The design concept is similar to Uber/Lyft with two key differences: (1) our handheld device concept and (2) the health-trained drivers. The concept has the potential to be scaled in numerous different

directions with the ultimate benefit being the empowerment of persons who are currently restricted in their movements. The current alternatives to our project are either unused by this population (e.g. Uber/Lyft) or expensive (e.g. Paratransit), and typically do not have our safety feature. The final product was a result from collaboration between the team itself, knowledge from excellent workshops, and input from

experienced innovators, whose feedback was crucial to our success.

Interdisciplinary collaboration was one of the main themes for the Nexus Maximus event, which previously I had not experienced to the extent of this program. Because of the background of the team, we each had a different perspective and used that perspective to formulate and

better our solution to this health issue. Every person in our group was essential to the development of our end-product and contributed ideas, suggestions, as well as to the final presentation of our project. The interdisciplinary nature of the weekend gave great insight to the nature of “the real world” industry and assisted in the development of skills to be utilized in future workplaces.

–Karla Geiss