

FOR IMMEDIATE RELEASE

Contact: 410.537.1829

www.jhpiego.org

October 27, 2014

Design Challenge to Improve Protective Gear for Ebola Workers Produces Promising Concepts from Johns Hopkins Participants

Baltimore, MD – A weekend design challenge at Johns Hopkins University (JHU) to develop new protective gear for health workers fighting Ebola drew students, faculty and clinicians from across JHU and beyond and \$25,000 in state seed grants to support further development of the best ideas.

Jhpiego, a global health organization and Hopkins affiliate, and the JHU Center for Bioengineering Innovation & Design (CBID) hosted the “Emergency Ebola Design Challenge: Personal Protective Equipment (PPE)” to harness the brain power and expertise of the Hopkins community to better protect health workers on the front lines of the Ebola epidemic in West Africa. The 65 participants included



employees from the Hopkins medical institutions, schools of public health and engineering, Applied Physics Laboratory and the Maryland Institute College of Art, as well as a seamstress, architect and robotics expert.

“It’s abundantly clear to all that we are sending our most valued and talented medical workforce to fight Ebola with less than perfect gear,” says Dr. Harshad Sanghvi, Jhpiego’s Vice President for Innovations and Medical Director. “The nurses and doctors who contracted Ebola in West Africa are incredibly smart and well-trained. They depended on the best gear we have now to protect them. We must do better.”

Youseph Yazdi, Executive Director of CBID, added: “We organized this event with the utmost sense of urgency, from concept to event in less than 10 days. The entire event is focused on developing creative new solutions that can be manufactured and in the field in a matter of months, not years.”

The weekend challenge produced four promising concepts for selected teams to address: cooling of PPE to allow users to keep them on longer; safer and more rapid removal of PPE; non-PPE patient isolation units; and extremely low-cost and easy-to-use protective gear for those caring for loved ones at home.

Judith Britz, Executive Director of the BioMaryland Center and a judge at the event, applauded Jhpiego and CBID for pulling together such diverse players in record time. “That’s what it will take to solve this problem, a diverse range of experts and viewpoints. The issues with PPE require a systems approach, with both technical and implementations expertise,” she said.



BioMaryland provided \$25,000 in seed grants for the best teams and ideas emerging from the weekend design challenge. “The State of Maryland is pleased to partner with Johns Hopkins CBID, Jhpiego, Clinvue and other participants to assist with rapid deployment of funding critical to taking the next steps beyond this design challenge,” said Britz.

The design challenge, held in the new Biomedical Engineering Design Studio on the Homewood campus, kicked off Friday afternoon with an intense four-hour immersion in problems with existing PPE. Nurses from Johns Hopkins Department of Epidemiology and Infection

Control demonstrated the process of donning and removing PPE to allow safe care of Ebola patients. Technical experts from Jhpiego provided background on the disease, and David Peters, Chair of the Department of International Health at the Johns Hopkins Bloomberg School of Public Health, provided insights on the health care situation in Liberia, Sierra Leone and Guinea.

Participants also received an overview of the landscape of existing PPE used in a variety of conditions, and a review of the CBID design process by Soumyadipta Acharya, Graduate Program Director of CBID, and Paul Ferris, CEO of Clinvue and a lecturer at CBID.

On Saturday, eight multidisciplinary teams were formed, each focusing on specific areas of weakness of existing PPE. Designers got to work with a wide range of supplies, including plenty of Tyvek, plastic sheeting, fabric, PPE, cooling devices and sewing machines. Many prototypes were built and refined, with immediate expert feedback. On Sunday, a panel of judges selected four promising concepts to carry forward.

Dr. Lisa Maragakis, Director of the Department of Hospital Epidemiology and Infection Control at Johns Hopkins Hospital and a judge, said, “I was skeptical at first, since we have spent many, many hours thinking of ways to improve PPE. I was very impressed and excited to see such terrific ideas emerge from this event that we had never imagined and that will undoubtedly be very helpful and lead to better and safer PPE in the near future.”

Dr. Adam Kushner, a surgeon with experience in West Africa and an Associate at JHU’s School of Public Health who participated in the event, added, “Seeing so many smart and creative people working so hard to develop new solutions was truly impressive. I am very confident that what was started this weekend will eventually be used to protect health care workers globally and save lives.”

For more information, please contact Melody McCoy, Vice President of External Relations and Communications, at Melody.McCoy@jhpiego.org or 410.537.1829.

About Jhpiego

Jhpiego (pronounced “ja-pie-go”) is an international, non-profit health organization affiliated with Johns Hopkins University. For 40 years, Jhpiego has empowered front-line health workers by designing and implementing effective, low-cost, hands-on solutions to strengthen the delivery of health care services for women and their families. For more information, go to www.jhpigo.org.