

AAAS panel considers pandemic emergency response

February 14 2014

When a pandemic spreads, health officials must quickly formulate a strategy to limit infections and deaths. That requires sifting through massive amounts of data in a short amount of time and organizing medical personnel who may have little information on the pandemic.

To help coordinate a rapid response to pandemics, a professor at the Georgia Institute of Technology in Atlanta has designed software that combines biological data on the [pandemic](#) with [demographic data](#) of the at-risk population so that [health officials](#) can develop a game plan to limit the pandemic's spread. The software also combs [social media](#) sites for real-time information on the pandemic and activities of the population.

Eva Lee, director of the Center for Operations Research in Medicine and HealthCare at the H. Milton Stewart School of Industrial and Systems Engineering at the Georgia Institute of Technology in Atlanta, will talk about her [emergency response](#) software at the 2014 AAAS annual meeting in Chicago.

"We have developed a real-time system that will gather the demographics of the region that is being affected, and also pick up on-the-ground-data about who is available and doing what, and about movement of the affected population," Lee said. "Our work is the first to take demographic information and real-time population behavior and interlace it with the biological information to come up with a decision that health officials can actually use."

Lee is the chair of the panel titled "Emergency Response and Community Resilience via Engineering and Computational Advances." The panel is scheduled for Friday, Feb. 14, from 3:00-4:30PM Chicago time.

Lee will share her experience helping federal officials respond to the H1N1 flu in 2009, as well as her experience planning an emergency response to a potential anthrax outbreak. Lee was also involved in coordinating a response to the 2010 earthquake in Haiti, and the decontamination and health screening effort in Japan after the 2011 Fukushima radiological disaster.

Other speakers on the panel include Ronald Eguchi of ImageCat Inc. in Long Beach, Calif, who will talk about inventory data capture tools to assess risk from natural disasters. Yasuaki Sakamoto, of Stevens Institute of Technology in Hoboken, N.J., will speak about improving social media for disaster response.

Emergency responders to a pandemic must quickly gather information on the biological agent to assess the characteristics of the pandemic and decide which treatment would be most effective. They also collect data on the risk factors of the individuals in the pandemic, such as the severity of patient's sickness, and if children or pregnant women are infected.

"The big challenge in a pandemic is how do you use all of this information to determine the best strategy that will give you the minimum number of total infections and mortality rate," Lee said.

Information from Lee's systems approach allows health official to determine where to allocate medical resources and personnel in the best way so that operations will be most successful. Through the software developed in her lab at Georgia Tech, officials can determine, for

example, how much vaccine to give at-risk populations and how much to give to the general populations to limit the spread of infection and mortality. Officials can also map where to set up medical sites to avoid traffic gridlock and worsening the pandemic as infected patients converge on treatment sites.

"We can do a real-time optimization to tell you exactly what are the sites that you should set up and who should be going where," Lee said.

Provided by Georgia Institute of Technology

Citation: AAAS panel considers pandemic emergency response (2014, February 14) retrieved 23 April 2024 from

<https://medicalxpress.com/news/2014-02-aaas-panel-pandemic-emergency-response.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.