Math professor awarded for impact on the field

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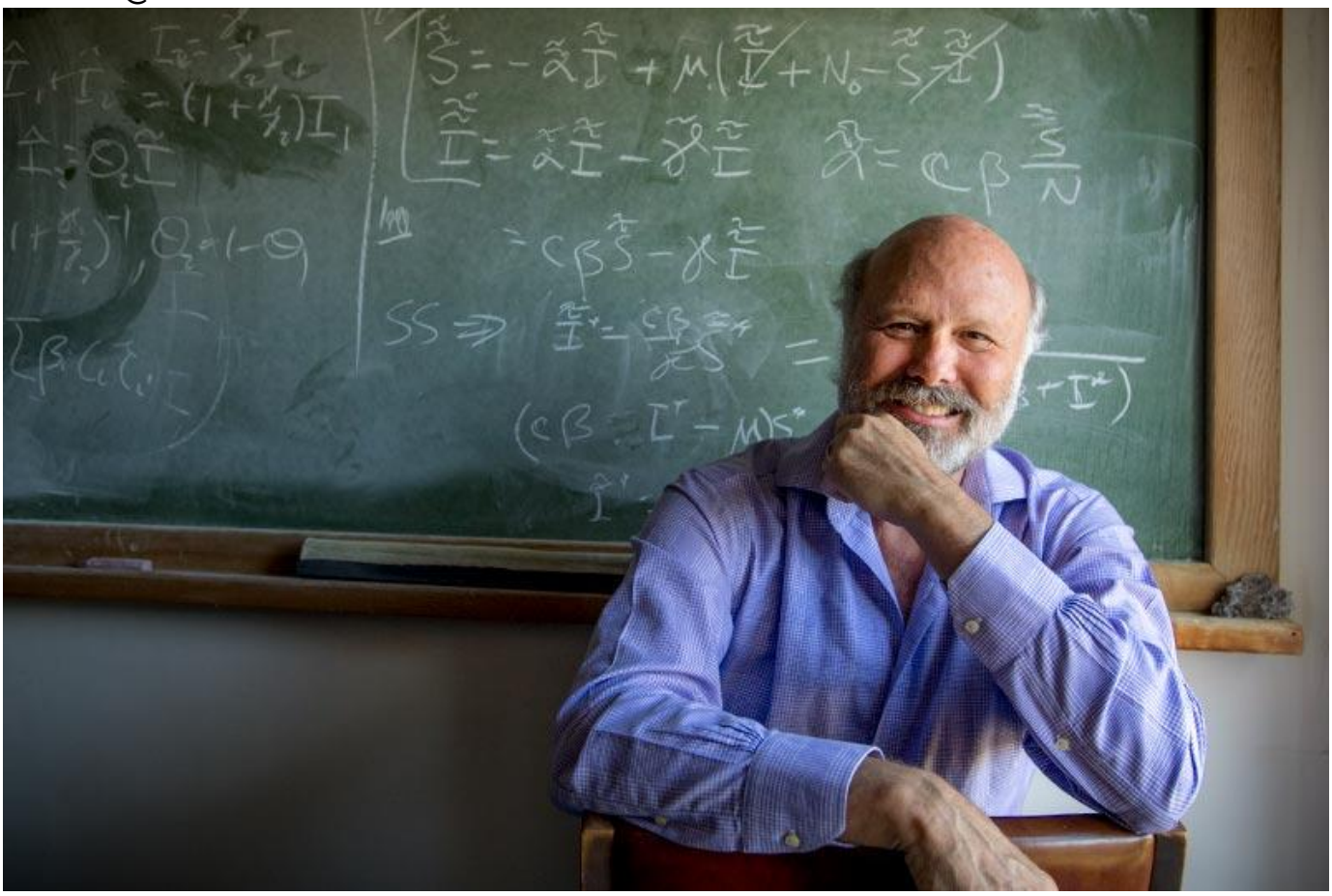

The International Society for Disease Surveillance recognizes Tulane mathematics professor Mac Hyman for his contribution to research in biosurveillance. (Photo by Paula Burch-Celentano)

The International Society for Disease Surveillance (ISDS) annually recognizes scientists and professionals for their contributions to research in biosurveillance, and this year Mac Hyman, a mathematics professor in the Tulane University School of Science and Engineering, is being honored twice.

Hyman is a co-author of two award-winning journal articles that address questions of how epidemiological modeling for infectious disease can help guide public health workers in mitigating emerging infectious diseases.

The ISDS is a nonprofit group that studies how the spread of disease is monitored in order to establish patterns of progression. The ISDS Research Committee developed the awards for outstanding research articles in biosurveillance to recognize disease surveillance scientists and professionals for their contributions to their fields of research.

The paper “The Biosurveillance Analytics Resource Directory (BARD): Facilitating the Use of Epidemiological Models for Infectious Disease Surveillance” received first place in the impact on field category, and the paper “Constructing Rigorous and Broad Biosurveillance Networks for Detecting Emerging Zoonotic Outbreaks” received second place in the scientific achievement category.

Hyman conducted the research in collaboration with the Los Alamos National Laboratory (LANL), which works to solve national security challenges through scientific excellence. The papers describe a comprehensive framework and application to help detect emerging pathogens and predict their spread after detection.

The resources for surveillance of infectious diseases in animals and wildlife are often limited, and the articles address how mathematical modeling can play a supporting role in examining a wide range of scenarios of pathogen-spread.

The first place article describes a new Biosurveillance Analytics Resource Directory being created at LANL. The directory facilitates identifying the appropriate operational model for predicting specific infectious/communicable diseases, such as Ebola, Zika, cholera, or influenza.

The second article, written with Tulane postdoc Carrie Manore and LANL collaborators, describes how a new multiscale, multihost epidemiological network model can guide the design of biosurveillance networks for detecting emerging zoonotic disease outbreaks, such as avian influenza.