

AMERICAN MATHEMATICAL SOCIETY JOSIAH WILLARD GIBBS LECTURE



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Abstract

The immune system is a complex distributed system of interacting cells and molecules that learns, exhibits its memory and most importantly protects us from infectious disease. While we are still uncovering how the immune system works, I will show through a variety of examples that it provides a fertile ground for interesting mathematical problems, from the understanding of how the immune system can recognize an almost limitless number of pathogens including some never seen before in all of evolutionary history, to the design of computer immune systems to protect against computer viruses, to the choice of next season's flu vaccine.

Wednesday, January 16, 8:30–9:20 pm

Ballrooms I & II, 400 Level
Baltimore Convention Center

The AMS Council established the Josiah Willard Gibbs Lectureship in 1923, making it one of the Society's oldest and most prestigious lectures. Gibbs (b. 1839–d. 1903), a mathematical physicist, was one of the greatest scientists America has ever produced. This invited lecture is popular in nature, directed at those who are not professional mathematicians and intended to make the public aware of the contribution that mathematics is making to present-day thinking and modern civilization.

