Scattering experiments are among the most powerful tools to probe the optical properties of matter. Such experiments are of fundamental importance in nearly every branch of physics and also arise in numerous applied fields. In this talk we review recent work on inverse scattering problems with applications to biomedical optical imaging. The focus will be on the multiple-scattering regime, where the corresponding inverse problems present fundamental mathematical and computational challenges. Experiments in model systems will be used to illustrate the results.

**Biography:** John Schotland is Professor of Mathematics at Yale University. Prior to joining the Yale faculty, he was Professor of Mathematics and Physics at University of Michigan, and founding director of the Michigan Center for Applied and Interdisciplinary Mathematics (MCAIM). He also held the Paris Sciences Chair at ESPCI from 2014-2019. He received the M.D. and Ph.D. degrees from the University of Pennsylvania.

Zoom 943 7952 1784, passcode: 728888

Host: Keith Baker

The Colloquium series of the Yale Physics Department is called the Physics Club. The name dates to the late 1890s, the era of J Willard Gibbs, who influenced the intellectual life at Yale through a number of graduate clubs.