

## “Topological Photonics in Three Dimensions”

### Abstract:

I will discuss my group's exploration of topological phenomena in photonics in two different experimental platforms: (1) laser written waveguide arrays in glass; and (2) 3D-printed photonic crystals based on two-photon photopolymerization. In the first, I will explore the nonlinear dynamics of solitons in photonic Floquet topological materials (in the bulk and on the edge). In the second, I will report on our observation of charge-2 Weyl points in 3D photonic crystals, and their splitting into two charge-1s.

### Brief Bio:

Mikael C. Rechtsman is an associate professor of physics at the Pennsylvania State University. His work spanned the fields of self-assembly science, photonic crystals, nonlinear optics, and topological photonics. He is perhaps most associated with the 2013 discovery of Photonic Floquet Topological Insulators in optical waveguide arrays. He is a graduate of MIT (S.B.) and Princeton (Ph.D), and he did his postdoctoral work at the Courant Institute and with Moti Segev at the Technion - Israel Institute of Technology.