An overview of work on wave propagation through dynamic materials will be given. Dynamic materials are spatio-temporal composites - materials whose properties vary in space and in time. Mathematically, we formulate the problem as linear, hyperbolic partial differential equations with spatio-temporally varying coefficients. The variability in the material constituents leads to effects that are unachievable through static (spatial-only) design. For example, with dynamic laminates we are able to screen portions of the material from the effects of a wave disturbance. With checkerboard geometry in space-time, we create pulse compression and energy accumulation, and recent work shows that these effects are structurally stable. (Received September 25, 2018)