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John M Davis* (John_M_Davis@baylor.edu), Department of Mathematics, Baylor University,
Waco, TX 76798. *Putting Mathematica in Motion: Using Animations in ODE and PDE Courses.*

We will demonstrate the effective use of the animation capabilities of *Mathematica* in ordinary differential equations (ODE) and partial differential equations (PDE) courses. Student projects in ODEs have included animating the behavior of various spring-mass systems (damped, undamped, forced, unforced, linear, nonlinear) as well as the beats phenomenon and resonance. From PDEs, we will share some demonstrations arising in the Fourier analysis of the wave equation and the heat equation. How have students reacted to these assignments and how has it helped their understanding of the mathematics? We plan to post sample notebooks on the web for the audience to try in their classes. (Received September 14, 2000)