An old problem in analytic number theory is to show that an L-function possesses simple zeros. Thanks to work of Levinson and Bauer, it is known that any degree one L-function has infinitely many simple zeros. For degree two L-functions there are fewer results known. In this talk I will present some recent work which establishes the existence of infinitely many simple zeros for the L-functions attached to certain modular forms. This is joint work with M.B. Milinovich.