Professor Peter Moore  
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- **Topic**: A Posteriori Error Estimators and HP-Adaptivity for Fourth-Order Partial Differential Equations

- **Date & Time**: Thursday, October 9 @ 3:30 PM

- **Place**: Room 207 Sid Richardson Building

- **Refreshments**: 3:00 PM in Room 318 Sid Richardson

- **Abstract**: I will present an extension of a hp-adaptive finite element code for second-order reaction-diffusion equations to fourth-order equations.

  Spatial discretization is done via a $C^1$ basis constructed from Hermite-Lobatto polynomials and the resulting ODEs are integrated in time yielding a method-of-lines approach. A posteriori error estimators will be described at multiple orders to drive the p-refinement. The interaction of the spatial adaptivity and time integration will be studied and results presented for several nonlinear equations including the Fisher-Kolmogorov and Cahn-Hilliard equations.