DRIVING SCIENTIFIC APPLICATIONS

subsurface energy & environmental flows (Dawson, Vesselinov, & Juanes)	electrochemical energy storage systems (Marzouk & Turner)	dynamics of polar ice sheets (Ghattas & Gunzburger)

RESEARCH THRUSTS

fast & reliable solution of multiphysics/multiscale problems	validation, adaptation, & management of models	advanced methods for inference	optimization under uncertainty

CORE APPLIED MATHEMATICS AREAS

multiphysics methods (Estep)	multiscale methods (Oden)	fast algorithms (Ying)	model validation & inadequacy (Moser)	multimodel & multifidelity methods (Willcox)	model reduction (Gunzburger)	inverse problems & data fusion (Biros)	optimal design & control (Ghattas)	uncertainty quantification (Marzouk, Butler)

CROSS-CUTTING THEMES

advanced discretization • adaptivity • scalability • data–model integration

adjoints & sensitivity • dimensionality reduction • stochasticity • managing uncertainty