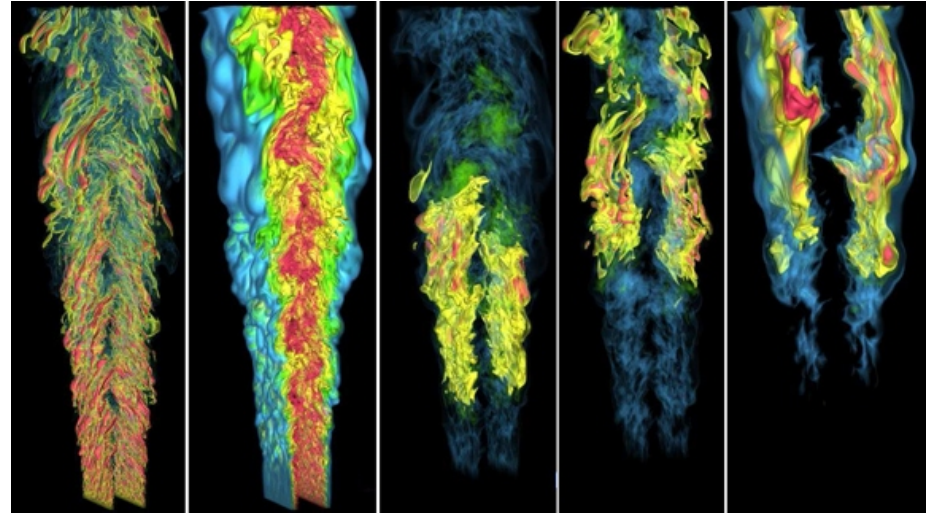## Overarching Goal

The development of a validated, *predictive*, multi-scale combustion modeling capability to optimize the design and operation of evolving fuels in advanced engines for transportation applications.

RESEARCH PLAN AND DIRECTIONS

- *Advance fundamental understanding and practice of combustion and fuel science*
- *Create experimental validation platforms and databases for kinetics, thermochemistry, transport processes, and flame structure*
- *Enable automated kinetic model generation and reduction*
- *Implement validated, multi-scale, quantitative prediction methods*
- *Establish a knowledge highway connecting the Center, academic and research institutions, and the transportation and fuel industries*
- *Train the next generation of combustion scientists*

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