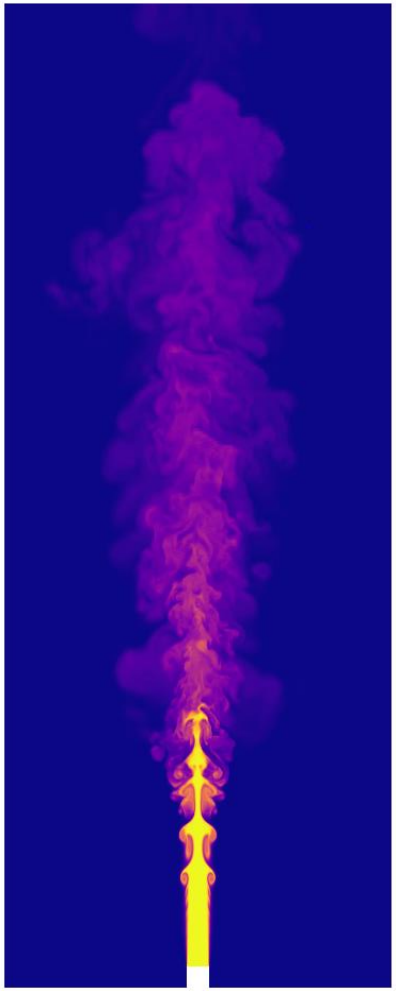
Ben Keeton

UCSD

- Direct Numerical Simulations (DNS) of turbulent and reactive fluid flow
- Current research areas:
  - Incompressible round jets
  - Low-Mach diffusion flames
- Future goals with supercomputing:
  - Turbulent reactive flows
- Code: ANL spectral method Nek5000
  - MPI parallelization
- Post-processing: MATLAB/VisIt



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- Since we resolve down to the smallest (Kolmogorov) scales of turbulent motion in DNS, the computational challenge is grid resolution
- In combustion simulations, the stiffness imposed by the chemistry places severe restrictions on time-stepping leading to long runtimes
- I’m interested in gaining a better understanding of resources available at SDSC so that we can leverage the supercomputers for future studies
- I’m also exploring parallelization of our serial input code and post-processing routines